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THAT APPRENTICE OF YOURS.

THE old axiom, that "The boy of today will be the man of to-morrow," never becomes too archaic or ancient to be resurrected. Its pungent and pointed truism cannot become obsolete, because the philosophy contained in it is based upon a universal and recognized principle of growth and development, of cause and effect.

Youth is the plastic, pliable and moldable stage of human existence. It is a time when growth can be either directed or misdirected. Properly guided, the dormant powers and energies of youth can be developed along lines of efficiency which will bear substantial fruits in later adult years.

One of the supreme advantages, which a boy obtains from compulsory military training in foreign countries, is the acquirement of habits of thought that inspire thoroughness, confidence and strength of action in all things undertaken. Perhaps that is one reason why so many men of foreign birth have become successful in the arts and crafts in the New World. Their early disciplinary training as soldiers had a strong tendency to instill in them those habits of personal efficiency which in after years proved wholesome and advantageous.

The training of efficient craftsmen must begin with the boy. Too often in the past the young man who served as an apprentice was accorded little more than scant attention. He was simply turned loose in the shop and left to progress as best he could. It appeared that nobody took him seriously, and often he was looked upon as a necessary evil which might or might not develop into something good.

There was none of that spirit of military discipline in the training of apprentices in the old days. There was no system by which an employer could foresee what progress the young man would make. It was a case of "sink or swim," or "survive if you can." Often the apprentice was cuffed and kicked about because he was slow to comprehend the half-intelligible orders or instructions given him by the men in the shop. It was only the exceedingly calloused youths, tough as iron, who succeeded in surviving the hardships of the old-time apprentice.

The lot of those apprentices was not a desirable one, and while it is true that many of the present-day master plumbers, who have achieved a fair measure of success as sanitary craftsmen, were once despised and abused apprentices, this is no argument in favor of the slipshod methods of the past.

And yet, while much progress has been made in the efficient training of apprentices, there are still no small number of instances where young men are little better off than in the days of yore, and where they must resort to "catch as catch can" methods to make any tangible headway in their chosen field. This state of affairs prevails as a rule in the smaller towns and rural communities where trade schools and technical instruction are rare.

Under such conditions, master plumbers owe more than a superficial duty to their apprentices. When evening trade-school instruction is unattainable, as it frequently is in small towns, the apprentice requires kindly attention and friendly counsel in matters and things that concern his future welfare as a sanitary craftsman.

He should be advised to cultivate the habit of trade-paper reading, and as a supplement to this, a technical course by correspondence in one of the schools teaching the science of plumbing would do much to advance the training of the deserving plumbing apprentice.

Conduits and Insulation for Heating Pipes

Illustrations and Descriptions of Conduits, Covering and Insulation for Heating Pipes

By CHAS. L. HUBBARD

IN SELECTING the best type of conduit to be used, it is necessary to consider the insulation, the initial cost and the durability. The conduits in most common use at the present time are those constructed of concrete, brick, vitrified tile, and wood, or a combination of the above materials.

Concrete is better adapted to this class of work than brick, on account of its lower cost and also because it has fewer joints and is therefore less likely to admit water from the soil. Brickwork, however, is often used for the construction of manholes and the chambers around valves and other fittings which must be accessible. Both concrete and tile are the most durable materials used and should be carefully considered when the plant is to be a permanent one. The question is sometimes raised whether it is economy to construct a conduit, the life of which will probably exceed that of the pipe. This, of course, should be carefully looked into where the construction is such that the conduit cannot be opened without too great expense for renewing the pipe when necessary.

Concrete tunnels, large enough for carrying the pipes and admitting workmen, have many advantages in the way of inspection and repairs and also in case of renewal, but are very expensive to construct. Two forms of this design with different methods of supporting the mains are shown in Figs. 1 and 2.

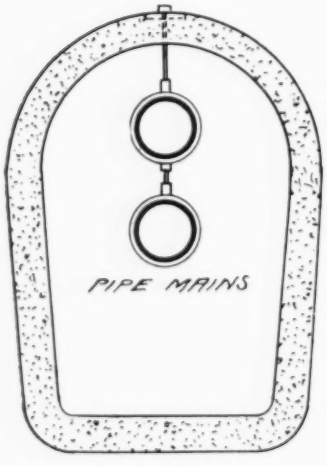

Fig. 1.

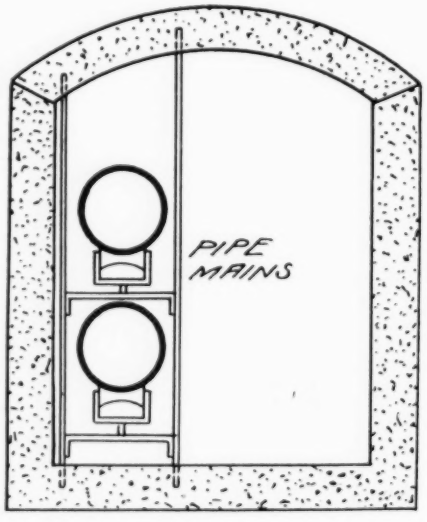

Fig. 2.

Concrete is also used for small trenches or conduits, where the pipes are packed in insulating material, filling the entire space, as in Fig. 3. These trenches are made with an open top, and after the pipe and insulation are in place are covered with slabs made water-tight with cement or tar.

A patented form of tile conduit is shown in Fig. 4. In this case the sections of tile are split lengthwise and the bottom half forming the trench laid first. The pipes are then put in place, being supported upon cradles resting upon concrete foundations and independent of the tiling. The cover, or upper half, is then put on and the joints cemented and the space around the pipes filled with asbestos sponge, granulated cork, or some similar insulating material.

A water-proof conduit which is a combination of concrete and tile is shown in Fig. 5, being also a patented form. The general construction is clearly indicated in the cut and does not need repetition. This form of conduit is especially adapted to wet locations where it is liable to be submerged. The lower half, which is of concrete, is constructed first and the pipes laid, after which the tile cover is put on and made water-tight by a cement dam at the sides and hot pitch poured in the joints. The insulation is practically the same as that described above.

It is important that all pipe conduits be thoroughly under-drained with tile laid in a filling of coarse gravel or crushed stone, special care being taken to provide a free outlet for the drains at points sufficiently near together to keep the trenches free from water.

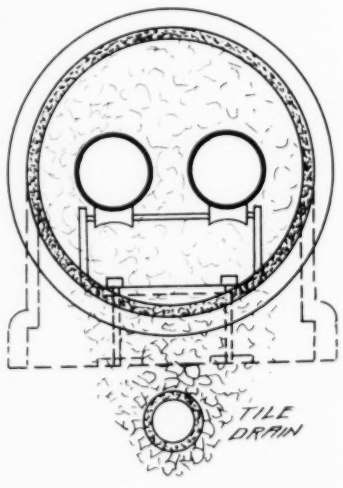

Fig. 4.

While concrete or tile conduits are the most durable, very good results have been obtained with those made of wood when properly constructed and protected against moisture. A section through a casing of this kind is shown in Fig. 6. The sections are made in lengths of 6 to 8 feet and are slipped over the pipe as it is laid. Solid turned logs are used for pipe sizes up to 6 inches, and staves for the larger sizes. The shell varies in thickness from 2 to 4 inches, according to size and the temperature carried in the pipes. It is strengthened with heavy galvanized wire and protected from moisture by a coating of asphaltum cement, with a special creosote preservative at the joints. The interior next to the pipe

is lined with bright tin. Another casing of this general type is shown in Fig. 7. This is made up with a tin lining (A) next the pipe, then a layer of asbestos (B), then wood staves (C), corrugated paper (D), and finally an outer casing of wood staves coated with asphaltum (F). This form of construction has the advantage of being re-

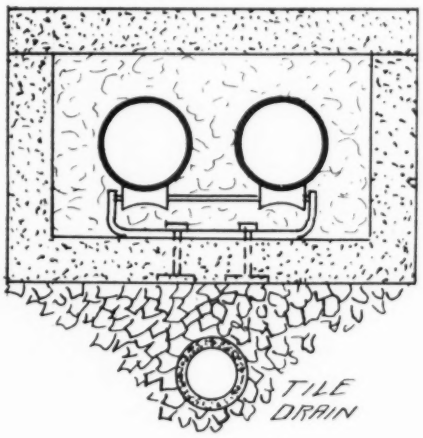

Fig. 3.

movable so pipes may be easily uncovered for repairs, or the casing may be applied to those already in place. This detail of construction is shown in Fig. 8.

The length of life of wooden conduits depends to a large extent upon the quality of the timber used, the thoroughness of the water-proofing and under-draining, and the character of the soil in which they are laid.

Conduits of this general construction have been known to last for 30 years, and several cases have been reported where they have been found in excellent condition after 10 or 15 years of service.

Insulation.

When considering the insulation of a pipe the entire covering, including the conduit, should be taken into account. In the case of brick or concrete tunnels the pipes are protected with some form of sectional covering which has the property of resisting dampness as well as prevent-

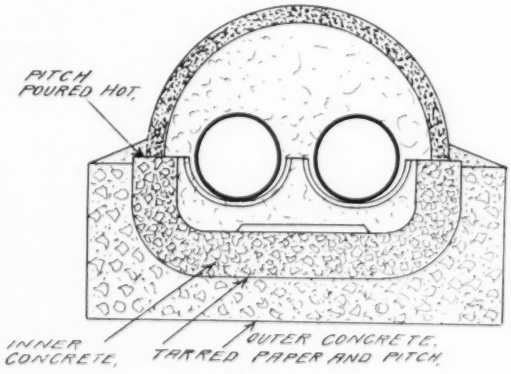

Fig. 5.

ing heat loss from the pipes. Although the tunnels may be dry in the winter when heat is on the mains, there is always a period during the summer when moisture will be pretty sure to gather, no matter what their construction. Hence, in selecting a covering for this purpose be sure to get one constructed especially for resisting dampness, and guaranteed in this respect by the makers.

The best grades of sectional covering have an efficiency of 75 to 85 per cent; that is, this proportion of the heat lost from bare pipes under similar conditions is saved. This efficiency of course refers only to the covering on the pipes and does not consider the insulation produced by the tunnel and covering as a whole. The effect of the

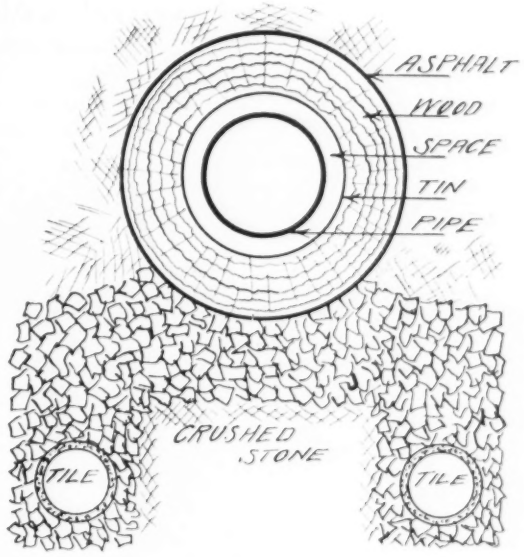

Fig. 6.

tunnel will depend largely upon the tightness of the manhole covers and upon the pipe openings into the various buildings. If these furnish sufficient area to produce a perceptible circulation of air through the tunnel, the insulating effect due to the tunnel walls themselves will not amount to very much, as in any case the dead air space around the pipe is what counts. Therefore, in tunnel construction, the circulation of air through it should be kept at a minimum. With well constructed concrete and tile conduits in which the pipe is well packed with non-conducting material, the efficiency will be somewhat greater than for the sectional covering used in tunnels, owing to its greater thickness. The conduits are usually made of such size that the thickness of insulation over any part of the pipes will not be less than 3 inches, which in the best class of work should bring the efficiency of the entire conduit up to 90 or 95 per cent.

In the case of wood conduits, the casing itself forms both the insulating material and the conduit, the whole

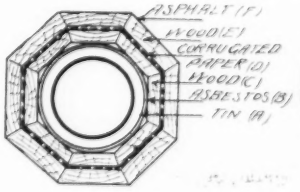

Fig. 7.

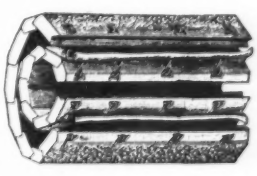

Fig. 8.

construction forming a unit. Recent tests upon a series of conduits of this kind, the walls of which were 4 inches in thickness; showed an average efficiency of 95 per cent. Wood casings are commonly made of such size that there is a dead air space around the pipe of 1 to 2 inches, the pipe being held in a central position by means of metal guides or runners.

Water Supply, Plumbing and Sewage Disposal for Country Homes*

By ROBERT W. TRULLINGER,
Rural Engineer, Office of Experiment Stations

(Continued from Page 226 in the August 21st, issue)

The Pneumatic Tank System—Continued.

The following table gives the pressures in the tank necessary to force water to certain heights in the house:

Feet head of water and equivalent pressure in tank.

Elevation.	Pressure in tank.	Elevation.	Pressure in tank.	Elevation.	Pressure in tank.
Feet.	*Pounds.*	*Feet.*	*Pounds.*	*Feet.*	*Pounds.*
1	0.43	20	8.66	75	32.48
2	.87	25	10.83	80	34.65
3	1.30	30	12.99	85	36.81
4	1.73	35	15.16	90	38.98
5	2.17	40	17.32	95	41.14
6	2.60	45	19.49	100	43.31
7	3.03	50	21.65	110	47.64
8	3.40	55	23.82	120	51.97
9	3.90	60	25.99	130	56.30
10	4.33	65	28.15	140	60.63
15	6.50	70	30.32	150	64.96

Pipe friction should be included in computing the pumping height, as discussed under "Pumping."

The Auto-Pneumatic System.

In the auto-pneumatic system the water is delivered fresh from the well to the faucets. This system consists essentially of an air compressor driven by a small gas engine or electric motor, an air-tight steel air-pressure tank, and one or more auto-pneumatic pumps. No water tank is required, since nothing is stored but compressed air. The pump consists of two small metallic chambers submerged in the water, and when a faucet is opened, they automatically fill and discharge, owing to the air pressure from the storage tank, thus giving a continuous flow of fresh water.

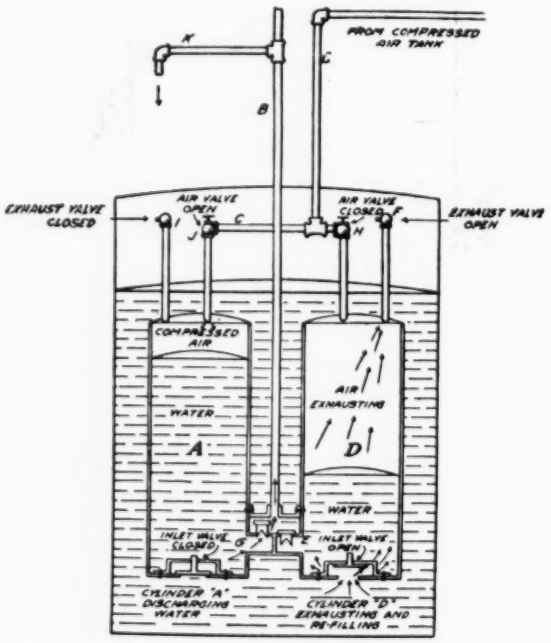

Fig. 16.—Principle of Operation of an Auto-Pneumatic Pump.

Fig. 16 illustrates the principle of operation of the pump. Suppose a small air-tight tank *A* with inlet valve is submerged in water and allowed to fill. A discharge pipe *B* is connected at the bottom leading upward to faucet *K*. Compressed air is forced through pipe *C* into the top of the tank so that the water is forced out through the discharge pipe until the tank is emptied of water. A similar tank *D* is connected as shown. The pump has a device for automatically opening and closing the air valves and exhaust valves to the tanks alternately. While *A* is emptying of water *D* is filling, and they discharge alternately.

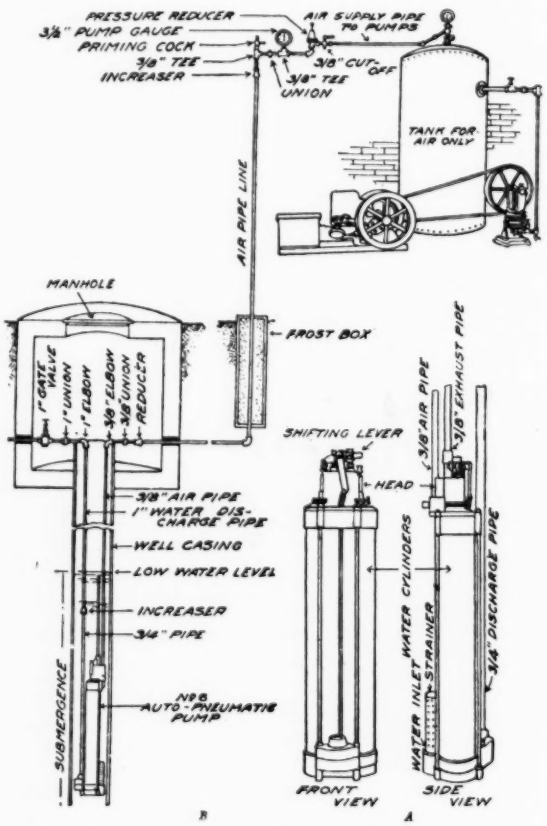

Fig. 17.—Working parts of an Auto-Pneumatic System: A, Front and Side View; B, Entire Working System as used in Bored or Cased Wells.

Fig. 17*A* gives a front and side view of an auto-pneumatic pump and Fig. 17*B* shows the entire working parts of a system and also how the pump may be used in bored and cased wells.

Each pump requires an air-pressure reducer, shut-off and release cocks, pressure gauge, etc. The air-pressure

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reducer is necessary to reduce the high pressure carried in the tank to the uniform low pressure required to operate the pump. It is placed in the air-pipe line between the air tank and the pneumatic pump. It can be adjusted to the proper pressure with an ordinary wrench. The proper working pressure required to operate the pump and raise water to the required height in the building is recorded on the pump gauge placed on the air-pipe line between the reducer and the pump. The following table shows the number of gallons of water that can be drawn from faucets with the pump under working pressures varying from 25 to 65 pounds and total starting pressures in a 1,000-gallon air tank varying from 40 to 100 pounds:

Pumping Capacity of a 1,000 Gallon Air Tank, in Gallons, Under Varying Internal Pressures.

Work pressure on pump gauge.	Total pressure in air tank at start.						
	40 pounds.	50 pounds.	60 pounds.	70 pounds.	80 pounds.	90 pounds.	100 pounds.
Pounds.	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*
25	375	259	833	1,075	1,310	1,548	1,786
30	221	442	663	884	1,105	1,326	1,548
35	102	306	510	714	924	1,123	1,327
40	.....	187	374	561	748	938	1,123
45	.....	85	255	425	596	765	938
50	.....	.....	153	306	460	612	765
55	.....	.....	68	204	330	476	612
60	.....	.....	.....	119	237	375	476
65	.....	.....	.....	51	153	255	357

For air tanks of other than 1,000-gallon capacity divide the figures in the table by 1,000, move the decimal point three places to the left, and multiply the result by the capacity of the tank in gallons.

Assume, for example, that the height to which the water is to be raised and the pressure required to operate the pump, including friction, make necessary a working pressure of 40 pounds on the pump. Then if the initial pressure in the air tank is 50 pounds, 187 gallons of water can be delivered at the faucets before the pressure in the air tank becomes too low to operate the pump.

The auto-pneumatic pump can be used in wells, springs, or lakes where the water is free from sand and mud and

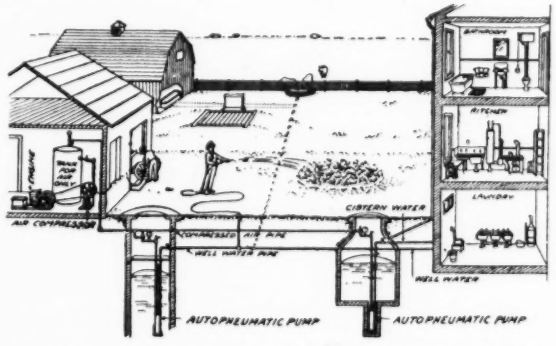


Fig. 18.—Application of Auto-Pneumatic System to a Farm Home.

does not have to be lifted more than 100 feet, or where the working pressure on the pump does not exceed 65 pounds.

Fig. 18 illustrates the application of this system to a farm home.

Pumping.

The water level in shallow wells is usually near enough to the surface to be within the limits of suction. The limiting practical suction lift for a pump is about 20 feet, although it will vary with the elevation above sea level. This means that the pump cylinder which raises the water by suction in lift pumps and which raises by suction and also forces the water in force pumps should not be more than 20 feet above the water level in the well. To practically eliminate suction lift the cylinder may be submerged as shown in Fig. 19, thus making the cylinder and pump frame separate and connected only by a section of pipe. This prevents the valves from drying out and makes the pump self-priming. Force pumps often have two cylinders, and in deep wells it is necessary that the lower or suction cylinder be either submerged or within at least 15 feet of the water level. In the figure shown

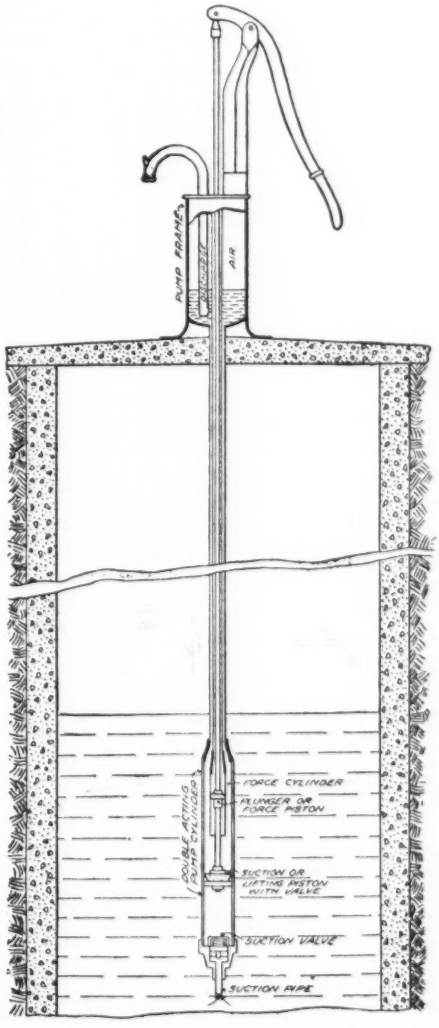


Fig. 19.—Force Pump with Cylinder Submerged in Shallow Well.

the forcing cylinder is within the suction cylinder. The suction of any type of pump must be air tight.

To find the approximate discharge at each stroke of a pump in gallons use the table shown on next page.

The discharge per stroke as shown by this table may be multiplied by the number of strokes per minute to find the discharge in gallons per minute.

The power required for pumping will depend on the number of gallons per minute one wishes to pump and the total lift.

The total lift is the vertical distance from the surface of the water in the well to the highest faucet or to the storage tank plus the friction loss in the pipes. If the length of distribution pipe is over 100 feet the loss by

frictional resistance in feet of lift should be determined and included in the total lift. The following table gives the frictional loss in feet of lift per 100 feet in pipes from ¾ to 4 inches in diameter, discharging from 5 to 40 gallons per minute:

Table of capacity of pumps.

Diameter of cylinder in inches	Length of stroke in inches									
	5	6	7	8	9	10	12	14	15	16
	Capacity per stroke in gallons.									
1	0.017	0.020	0.024	0.027	0.031	0.034	0.041	0.048	0.051	0.054
1¼	.022	.026	.030	.034	.039	.043	.052	.060	.065	.069
1½	.027	.032	.037	.043	.048	.053	.064	.074	.079	.085
1¾	.032	.039	.044	.051	.058	.064	.077	.089	.096	.103
1¼	.038	.046	.054	.061	.069	.077	.092	.107	.115	.122
1¾	.052	.063	.073	.083	.094	.104	.125	.146	.156	.170
2	.068	.082	.095	.109	.122	.136	.163	.190	.204	.218
2¼	.086	.103	.121	.138	.155	.172	.206	.241	.258	.275
2¼	.106	.128	.149	.170	.191	.213	.255	.298	.319	.340
2¾	.129	.154	.180	.206	.231	.257	.309	.360	.386	.411
3	.153	.184	.214	.245	.275	.306	.367	.428	.459	.489
3¼	.179	.215	.251	.287	.323	.359	.431	.503	.539	.575
3½	.208	.249	.292	.333	.375	.417	.499	.583	.625	.666
3¾	.239	.287	.335	.382	.430	.478	.574	.669	.717	.765
4	.272	.326	.381	.435	.490	.544	.653	.762	.816	.870
4¼	.307	.368	.429	.491	.553	.614	.737	.860	.921	.982
4½	.344	.413	.482	.551	.619	.689	.826	.964	1.033	1.102
4¾	.384	.460	.537	.614	.690	.767	.920	1.073	1.150	1.227
5	.425	.510	.595	.680	.765	.850	1.020	1.190	1.275	1.360
5¼	.469	.562	.656	.750	.843	.937	1.124	1.311	1.405	1.499
5½	.514	.617	.720	.823	.926	1.029	1.234	1.440	1.543	1.646
5¾	.562	.674	.787	.899	1.011	1.124	1.348	1.573	1.686	1.798
6	.613	.734	.857	.979	1.102	1.224	1.469	1.714	1.836	1.958

Fractional loss in feet for 100 feet clean iron pipes.[1]

Gallons per minute.	¾ inch.	1 inch.	1¼ inches.	1½ inches.	2 inches.	2½ inches.	3 inches.	3½ inches.	4 inches.
5	7.6	1.9	0.71	0.27	0.09	0.05	0.01	.....	.....
10	26.9	7.3	1.4	1.0	.28	.09	.05	0.01	.....
15	66.0	16.1	5.5	2.2	.57	.18	.09	.05	0.02
20	115.9	28.0	9.2	4.8	.96	.32	.13	.07	.03
25	179.0	43.7	14.7	6.0	1.7	.48	.23	.09	.05
30	264.0	63.2	21.0	8.6	2.1	.69	.30	.14	.07
35	372.0	85.1	28.9	11.6	2.7	.92	.39	.20	.11
40	461.0	110.0	37.0	14.9	3.7	1.2	.53	.25	.14

[1] Ellis and Howland's experiments.

Water weighs 62.5 pounds per cubic foot and there are 7.48 gallons in a cubic foot. Divide the number of gallons pumped per minute by 7.48 to get the cubic feet pumped per minute. Multiply the cubic feet by 62.5 pounds to get the weight of water pumped per minute. Multiply the weight by the total lift, which will give the foot-pounds of work per minute; 33,000 foot-pounds per minute equal 1 horsepower. Divide the foot-pounds per minute by 33,000 and the result will be horsepower. The horsepower as computed from the quantity pumped per minute and the total lift should be doubled, as a pumping outfit usually has an efficiency of about 50 per cent. In general, from 1 to 3 horsepower is all that is required for ordinary farm pumping. In cases where water for the house only is wanted, ½ to ¾ of a horsepower is sufficient.

Types of Pumps.

There are several types of pumps which may be used in farm pumping. The most common are the ordinary lift pumps which simply raise the water to the ground surface from a shallow well. For elevated tank systems and pneumatic tank systems the combination lift and force pump is necessary. If a special air pump or compressor is not employed it is necessary that a combination air and water pump be used for pneumatic tanks, especially in pumping from deep wells.

There are many types of hand force pumps for shallow and deep well pumping which may be applied to either elevated tank or pneumatic tank systems.

Fig. 15 shows a deep-well windmill pumping outfit applied to a pneumatic tank system, and Fig. 13 shows a shallow well windmill pumping outfit supplying water to a tank on the windmill tower. Fig. 20 is a pumping jack which may be connected with a deep or shallow well pumping outfit applied to either system. This jack may be operated by gas engine or electric motor. Fig. 21 shows two other types of windmill force pumps, *A* for shallow wells, and *B* for deep wells.

In obtaining information from the manufacturers of pumping equipment as to the particular equipment which will suit certain needs, the power required, etc., it is well to send data on the following: The source of water supply, whether a well, spring or surface supply; inside diameter and total depth of the well; the distance from the ground surface to the water level in the well; the flow of the well; the number of gallons to be pumped per hour; the relative positions of the water supply and the point to which the water is to be forced; the position in which the pump is to be placed; one's preference as to pneumatic tank, elevated tank, or auto-pneumatic system;

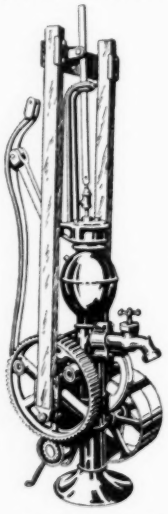


Fig. 20—Pumping Jack for Either Deep or Shallow Well Pumping.

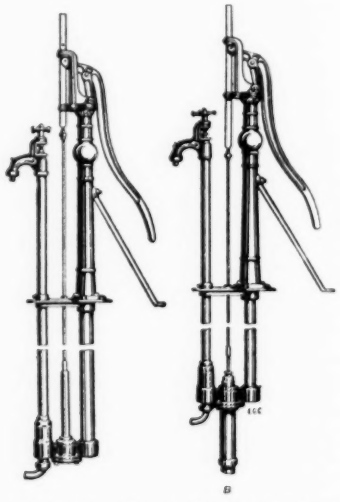


Fig. 21—Two Types of Windmill Force Pump: A, for Shallow Wells; B, for Deep Wells.

the kind of power to be used, and whether or not power is already available, such as electric motors, windmills, or gasoline engines, with a complete description of the power, its revolutions per minute, voltage, cycles, phase, direct or alternating current, etc.

Where a supply of pure water may be obtained in the immediate neighborhood, which is so situated that a considerable fall may be obtained within a reasonable distance, a hydraulic ram may be used for pumping.

(To be continued.)

Wallace M. Parker, city plumbing inspector, of Lexington, Ky., reports that a large number of persons who have recently had plumbing installed have asked that certificates be issued showing that the work was done according to the new ordinance which recently went into effect. So far no certificates have been issued, but Mr. Parker has stated that if the property owners demand such certificates the plumbers will be forced to issue them.

The Central Labor Union, of Canton, Ohio, has added its weight to the influences which are endeavoring to secure the construction of the much-talked-of public comfort station on the Square, the organization recently authorizing the appointment of a special committee for that purpose, which has been instructed to use every effort to push the matter along. Virtually the entire city is united in favor of the project, which was halted by the opposition of the county authorities.

A Retired Plumber's Advice to Beginners

A Letter from Eliphalet Leadbeater, Retired Master Plumber, to His Nephew, Michael Leadbeater, Just Embarked in Business

Transcribed by DANIEL LOUIS HANSON

Petersham, Mass., August 18, 1915.

MY DEAR MIKE:—If I had had the nerve on the fifth anniversary of my business existence to have drawn up a correct balance sheet and looked the figures squarely in the face, I should have ascribed my failure—for up till then that certainly described my condition—to mine enemies, the architects, for whom I had done work.

Today, thirty-five years later, and with a comfortable bank balance to fall back upon, as well as a record for having conducted my business in above-board methods, at least so say the chairmen at the various banquets where I am asked to speak, I can honestly ascribe my modest success to my friends, the architects, with whom I have done business.

That I felt differently thirty-five years ago, from what I do today, was not so strange; then I was the hot-headed and youthful Eliphalet Leadbeater; today I am simply your time-scarred but worldly-wise Uncle Elif. Between those two dates of my life lies much and not a little of it in connection with architects. You had better read carefully.

Forty years ago a master plumber could do a hundred contract jobs a year and not see either an architect or his specifications on more than half a dozen of them. The building contractor and his so-called sketches, which could be changed this way or that, was much in evidence. Nor was plumbing as common then as a little later. I have heard it said that the enormous wealth of the Astor family was made up in no small part of what it saved in leaving out plumbing from the miles of houses it erected during those years.

While an exaggeration, it has some truth to it; plumbing was a comparative rarity and a plumbing specification so unusual that a beginner in business shied off from it as a colt does from the first auto it sees. The few architects there were could be found along Canal Street and on Park Row and as a rule were an impecunious lot—poor but honest. It was my good luck, as I now see it, to bump against one of these Park Row chaps quite early in my business life. But I didn't consider it good luck at the time, just the opposite.

Ah, my boy, those were the dog days of my business existence! Young and headstrong, with any amount of faith that I could lick the whole world were it arrayed against me and then going out and daring it to appear! There were few men and systems I didn't take a tilt at in those days when I looked red; and architects were my pet aversions.

One day, Moses Irons happening to be East on a business trip, I bought a small order from him—we had been good friends for some time. During the few minutes of farewell conversation we had, he told of a colt that he, as a boy, had the training of in his Massachusetts home:

"I shall always remember, Leadbeater, what a time I had getting that colt to travel in single harness; the number of times it kicked the breeching off and me as well and the spills it gave me. But one day it all of a sudden discovered that it could pull a load—and then everything was easy; pride had taken possession of the beast, it knew its strength and rejoiced in it. The worst job, however, was to break it in to teaming with another horse; it seemed humiliated that it wasn't allowed to do all of the work; it resented assistance. Team work is the hardest to teach colts or young master plumbers."

And Moses Irons was right; I simply couldn't tolerate during those first years that any one should try to pull with me or try to keep me in line. And that is why I got into the attitude of hostility toward architects and their specifications. Oh, how I made enemies in those halcyon days, Mike!

I used to buy my clothes of a tailor in Duane Street, near Broadway, Abbott by name, who finally decided to erect a row of brown stone fronts in the then new district above 42nd. He chose for his architect a chap up on Park Row, who persuaded him that each separate house should have plumbing and prepared a specification covering the jobs. Abbott told me that if interested I might see the architect, Melrose by name.

Now if I had been less scrappy, I would have felt grateful first to Abbott for giving me a chance to figure and then to Melrose, who was solely responsible for the fact that any plumbing whatsoever was to be installed. But I saw red in those days and bucked against the specifications, which certainly were simple enough, just a pan closet, an imported lavatory and a zinc tub in each unit, and took my trouble to Abbott. I was willing, I explained, to do the job, but I refused to figure on specifications drawn up by an architect; I would submit my own.

Abbott couldn't see it that way: "You buy a suit from me, based on what is the standard fashion, material, etc., at the time. You see suits of that design and pattern in a hundred shops along Broadway and Canal Street. You know what you want when you come here.

That is a specification for a suit of clothes. I don't submit that idea as my own, it is universal as far as New York City is concerned. Why shouldn't I ask the same of you on plumbing?"

I went back to Melrose in Park Row and figured the job—got it and began what proved to be a losing fight with the architect. Instead of the pan closet specified—as good as any of those disease-breeding things were—I substituted a more expensive and, just as foul, a fixture. The lavatory I changed too and I made some alteration in the zinc-lined coffin termed a bath. My changes saved me nothing; cost me a pretty penny in fact. Of course the architect got after me and I fought back. The dispute was referred to Abbott, who, as I might have reasoned, sided with Melrose.

I not only lost on that job but also by getting no more work out of that Park Row office and by having a dissatisfied customer, who passed on my reputation to other builders in that rapidly growing section. Of course, too, I took my tailoring trade to some else in the future, but that didn't hurt Abbott, who sold out in a year or two, that he might devote himself to building and real estate.

It took me some years more to learn that if I wanted to make changes in specifications to get the architect's consent first. If he declined to agree with me I found

it a poor policy to aviate over him to the owner, one always loses in the long run.

Then some time afterwards, I learned that it was of more value to me as a master plumber that the entire craft of us had a reputation for honesty and square dealing than for me alone to have that sort of reputation. It meant more to me in dollars and cents that the public looked upon master plumbers generally as honest than to have a few individuals know me to be that and to be suspicious of the rest.

When I got that in under my vest I had gotten to the second stage of training as described by Moses Irons

"I cultivated Architects. They helped me and I helped them; we pulled together to a Mutual Profit.

and was broken in to the value of co-operative effort. I believed more in all of us master plumbers than in myself individually. That was a big step onward!

Then I saw, after a while, that the specification covering a job protected me and other legitimate concerns against the fly-by-night firms, the pirates of the plumbing world; and that it was gradually, but surely, lifting our line of business up to a higher level. From then on my business and profits grew. I cultivated architects; they helped me and I helped them; we pulled together to a mutual profit.

As business moved north on Manhattan Island architects went with it; among them was one whose name stands now so high in the list that I shall let you guess who he is. When I first met him he was staggering under his first big job, a hotel in Union Square. Staggering, I say, for while he was up on most of the work, plumbing and heating were mysteries to him. He was actually scared, but didn't want any one to know it. I sized up his predicament and said:

"You are going to be awfully busy on that hotel and I have my evenings to spare; why not let me draw up plumbing and heating plans for you and then both of us can go over the specifications and line up something that will appeal to you?"

"What will you charge me?" he asked.

I came mighty near making a break and saying. "Nothing," but saved myself. "Fifty dollars," I answered; it was worth two hundred at least.

Of course he saw that, too, when I brought him the plans and he wanted to pay more, but I stuck to my price. Later I drew up the specifications for him, and the job went to another shop which was so far below me and others in bid that there was no hope of reconciling us. But I didn't worry, I knew that I had made good with a growing man, and so I had. I guess you know whom I mean, and if you are up to date, Mike, possibly some of the fat from his office may be fried out in your Thirty-first Street shop.

Occasionally you will run across a specification which riles you; you don't like the concern whose fixtures are mentioned, and you feel like going up and knocking the stuff with the architect. Feel that way as much as you please, Mike, but stop short of going. Let manufacturers do their own fighting; be a neutral on specifications when it comes to fixtures. That will mean more to you with architects and supply houses both.

I am not going to write a word about "skinning specifications;" no one but a fool tries to pull off anything like that in these days of standardizing business. A master plumber had better go out and hold up some lone pedestrian of a night; it will be much safer than skinning specifications during office hours.

Then there is the uplift work that you can do among your acquaintances, the architects; don't fail to boost fixtures that are just a little better than those of yesterday. Does he specify a certain kind of tub, don't try to change him on that particular job; that is a pretty risky thing to attempt, but see if by diplomatic means you can't work up his ideas, so that the next job will mean a better tub, and that of course will take with it a nicer lavatory and an appropriate closet.

Oh, Mike, what a chance you youngsters of today have! The course is marked for you, and it is always leading to better things; cleaner methods of business, better fixtures and surer profits. We silly ones of years ago used to buck at plumbing specifications; today there are individual specifications and it behooves the beginner in business to line himself up with them.

Mike, is there an architect in your neighborhood? Get next to him. Your uncle,

Eliphalet Leadbeater.

Savannah, Ga.—The Seckinger Plumbing Co. has been awarded the contract for the plumbing in the Bethesda Orpanhage.

Jacksonville, Fla.—C. E. Belot has been awarded the contract for the installation of a plumbing system in the county armory building. Consideration, $1,200.

Columbus, Neb.—A. Dussell & Co., of this city, have secured the contract for the installation of plumbing and heating systems in the new Masonic Home in Freemont, Neb.

Richmond, Va.—The American Heating & Ventilating Co. has secured the contract for the installation of an up-to-date heating system in the George Washington School at Norfolk, Va. Consideration, $1,234.

Paterson, N. J.—I. A. Stroms, of this city, has secured the contract for plumbing the new Municipal Building, at Clifton. Consideration, $2,393. The F. A. McBride Co., also of Paterson, has been awarded the contract for the installation of a heating plant in the same building.

New Plumbing Law for Oklahoma

The Legislative Committee's Report to the Recent Convention of the Oklahoma Master Plumbers' Association

AS Chairman of your Legislative Committee for the current year, I beg to report the result of our labors since the last Convention: About the first of March the following bill was introduced in the House of Representatives as House Bill No. 185, by Washington Hudson, of Tulsa, Okla.:

An Act to Create a Board of Examiners and Inspectors of Plumbing in Cities and Towns of Over Two Thousand Inhabitants, and Compensation Provided for Said Board.

Be it enacted by the People of the State of Oklahoma:

Plumbers to Possess Certificates.

Section 1. That any person now or hereafter engaging or working at the business of plumbing in cities or towns of two thousand or more inhabitants, in this state, either as master plumbers or as journeyman plumbers, shall first receive a certificate thereof in accordance with the provisions of this act.

Examination of Certificate.

Section 2. Any person desiring to engage or work at the business of plumbing, either as a master plumber, employing plumber or as a journeyman plumber, in cities having a population of two thousand, or more, and a system of water supply or sewerage, shall make application to a board of examiners hereinafter provided for, and shall at such times and places as said board may designate, be compelled to pass such examination as to his qualifications as said board may direct. Said examination may be made in the whole or in part in writing, and shall be of practical and elementary character, but sufficiently strict to test the qualifications of the applicant.

Board of Examiners—How Constituted.

Section 3. That there shall be in every city of two thousand inhabitants or more, a board of examiners of plumbers, consisting of three members, one of which shall be chairman of the board of health of said city, who shall be ex-officio chairman of said board of examiners; a second member, who shall be a master plumber; a third member shall be a journeyman plumber. Said second and third members shall be appointed by the mayor and approved by the council or city commissioners, as the case may be, of said cities within three months after the passage of this act, for a term of one year, and shall be paid from the treasury of said city, the same as other officers in such sums as the authorities may designate, provided that in no event shall such sums paid second and third members exceed the amount paid for certificates, as provided for in the succeeding section.

Meetings of Board—Examinations, Fees.

Section 4. Said board of examiners shall within ten days after their appointments, meet, and shall then designate the times and places for examination of all applicants desiring to engage in or work at the business of plumbing within their respective jurisdiction. Said board shall examine said applicants as to their practical knowledge of plumbing, house drainage and ventilation, and if satisfied of the competency of such applicants, shall thereupon issue a certificate to such applicant authorizing him to engage in or work at the business of plumbing, either as master plumber, or employing plumber or journeyman plumber. The fee for a certificate for a master plumber or employing plumber shall be $5.00; for a journeyman plumber it shall be $1.00. Said certificate shall be valid and have force throughout the state, and shall be renewable annually, and all fees received for said certificates shall be paid into the treasury of the city where such certificates are issued.

Applications.

Section 5. All persons who are required by this act to take examinations and procure a certificate as required by this act, shall apply to the board of the city where they reside or to the board nearest their place of residence.

Plumbing Regulated by City.

Section 6. Each city with a population of two thousand or more in the state, having a system of water supply or sewerage, shall, by ordinance, within three months after the passage of this act, prescribe rules and regulations for the material construction and inspection of all plumbing and sewerage placed in, or in connection with any building in each city, and the board of health or proper authorities shall further provide that no plumbing work shall be done, except in case of repairing leaks, without permit being issued therefor upon such terms and conditions as such city shall prescribe.

Plumbing Inspector—Qualifications.

Section 7. Each city with a population of two thousand or more in the state, having a system of water supply or sewerage, shall, by ordinance, within three months after the passage of this act, create an office of plumbing inspector, whose duty it shall be to inspect all plumbing installed and furnish a certificate of approval of the same. Said plumbing inspector shall not have less than five years' practical experience at the plumbing business, and shall not be interested, either directly or indirectly with any firm or corporation engaged in the plumbing business. The salary of said plumbing inspector to be provided for by the respective cities.

Penalty.

Section 8. Any person violating any provision of this act shall be deemed guilty of a misdemeanor, and be subjected to a fine of not less than twenty-five ($25) dollars, nor exceeding one hundred ($100) dollars or the cancellation of his certificate, or both, for each and every violation thereof.

Section 9. All acts or parts of acts in conflict herewith are hereby repealed.

Approved March 16, 1915.

After many conferences with the Committee on Municipalities of the House we prevailed on them to report favorably on the bill.

Mr. Shehe, of the Journeyman's Association, and Mr. James Anderson, Building Commissioner of Oklahoma City, also made talks before this committee in support of the bill and lent valuable assistance to your committee in getting the same acted upon. About this time your honored President, William F. Black, of Enid, appeared on the scene, and for two weeks we labored together with various committees of both Houses, and finally succeeded in getting the bill passed, with an amendment changing the size of the cities to be affected by the bill from Five Thousand to Two Thousand.

The following gentlemen deserve a vote of thanks from our Association for the help they gave your committee in

getting this bill passed: William F. Black, of Enid, and Kibb Warren, of Shawnee.

These gentlemen left their business and came to Oklahoma City and gave all the support possible: Representative Childers, of the House; Senator Charles Barritt, of the Senate; Senator Eugene Watrous, of the Senate.

Now, gentlemen, it's up to the master plumbers of the state to see that this bill is put in force. There was no emergency clause attached to the bill, and it became a law and in full force June 16, 1915.

Respectfully submitted,
B. Z. Hutchinson, Chairman.

CHICAGO MASTER PLUMBERS URGE RE-ESTABLISHMENT OF GAS-PIPING.

The Chicago Master Plumbers' Association is instituting a campaign among its members for the purpose of re-establishing the installation of gas piping in buildings in Chicago. The proposition is one of more or less interest to the plumbing trade. C. F. Taffe, president of the association, in a letter to the editor of "Domestic Engineering" states that the following article, from the "Architect and Building News," makes clear the position of the local trade concerning this matter:

Buildings Not Piped for Gas Are Poorly Equipped.

"The landlord wants his rent. He has invested his money in St. Louis real estate in order that he may have a regular income from his rentals, but how can he get his rent if his buildings are without tenants?

"Keeping the building rented is a matter of vital importance to the property owner, and yet it is an easy matter, as every real estate agent will tell you, if the building is properly equipped," said John Stevens, of Stevens & Pearson, architects.

It is a known fact that buildings that have not been kept up to the standard show no increase in value and are vacant part of the time. It must not be expected that values can be maintained if property is not kept up with the present times. Keeping up with the present-day pace requires that all new buildings shall be equipped with all manner of conveniences, not only for the present tenant, but for the tenant who may want to occupy your buildings tomorrow. Buildings occupied only a few years ago as residences are today changed into factory buildings.

A man builds today, but neither he nor his architect can tell what will be the character of the business carried on by the tenants a year or two hence.

Piping the new building throughout for gas is considered by the architect today as necessary as the plumbing and glazing. A few years ago an architect would eliminate gas pipes. The architects and owners now realize there was no economy in leaving out gas piping.

Gas has been so largely adopted as an illuminant and fuel that both architects and builders or owners realize that all buildings, large or small, must be equipped with gas.

This change in the determination of architects and builders to provide gas pipes is but natural. A builder or owner may think today that his new building will be occupied by a certain tenant, who will have no use for gas. A few weeks hence another tenant may enter the building who will insist on using gas. This change, in many cases, means that the newly-built walls must be opened and gas pipes inserted. This means an additional expense to the owner of the building.

Experience has taught the architects and owners alike that a modern building must include gas piping. There are very excellent reasons for this statement. The wide diversity of industries to which a present-day building must adapt itself makes this a necessity. The nature of tenants will change, and in order to provide for their varied requirements for light, heat, fuel and power, the building should be piped for gas.

There are now over one thousand uses for gas, and new uses are being discovered every day. Any one of these may be a feature of the business that goes into your building.

The cost of installing gas piping in a building is a very small per cent of the total building's cost, and the work can be done neater, cheaper and better at the time of construction.

PLUMBING TRADE SUFFERS IN ERIE FLOOD.

In the big flood, occasioned by a cloudburst, which rendered nearly 2,000 people homeless and damaged property estimated at several millions of dollars at Erie, Pa., on August 3rd, a number of men engaged in the plumbing and heating trades also suffered materially from the heavy torrents.

It was estimated that about 25 persons lost their lives in the disaster. The cloudburst came as the climax of three days of steady rain. Mill creek, which divides the city, already swollen beyond its banks, became a torrent when the clouds opened up. The business section was flooded to a depth of five feet and all lines of communication were blocked.

Houses Washed Away.

In the rush of water, houses were torn loose from their foundations, and sewers and drains were choked.

After the Flood in Erie, Pa.—H. E. Volland's Plumbing Establishment and the Jarecki Mfg. Co.'s Plant.

The worst congestion came at Ninth Street, which is the center of the city. Half a dozen houses were washed away here and piled up seventy-five feet high in the path of the waters.

Among the first plants to go out of commission was that of the Erie County Electric Co., which supplied the city with light. Immediately darkness settled over the city.

Towns east of Erie for a distance of fifty miles reported a tremendous downpour of rain and overflowing streams.

It was declared that the damages brought on by the heavy rains are the worst in the history of that section of Pennsylvania.

Plumbing and Heating Trades Suffer.

Along with the other business interests the plumbing and heating fraternity suffered losses from the heavy flood which wrecked a large portion of the city.

The plumbing and heating firm of Scobel & Winston, situated at 2027 State Street, soon discovered that their store and cellar were badly flooded. The shop of H. E. Volland was flooded and wrecked.

The home of James Purcell, a well-known master plumber, was inundated and his garage wrecked. Several bodies of persons drowned in the flood were found floating in the rear of his residence.

Damage estimated at over $200,000 was done in the flooding and wrecking of the Ninth Street plant of the Jarecki Mfg. Co. A very large stock of fittings were kept in the basement, and one can imagine the state of the boxes in which fittings were packed.

William Becker, of the plumbing and heating firm of Becker & Co., lost a handsome two-story (store and dwelling) house.

The home of Edward Pfadt, of the firm of Meyer & Pfadt, was entirely flooded and the furniture on the first floor ruined. His friends declare that this misfortune will prove a considerable loss to him. He had just married, and the new furnishings of his home were practically destroyed.

One plumber lost his life—a journeyman named Wm. Devitt, who was drowned, together with four members of his sister's family.

Questions and Answers

SUGGESTS CHANGE IN HOT WATER SUPPLY CONNECTIONS.

Editor "Domestic Engineering":—I submit plan of connections, as recommended by you in your issue of July 24th, and would ask whether it would not be better to supply cold water to boiler B only, cut out the supply to boiler A, connecting only the flow pipe to the top of the latter. My reason is that when the furnace only is in operation, and boiler B is hot, the hot water will rise to boiler A, but will be cooled by the entrance of cold water to that boiler, causing only lukewarm water to be delivered to fixtures.

Omaha, Neb. B. H. E.

Correspondent's sketch is reproduced in our illustration, Fig. 1. We are inclined to believe the connections which we have recommended will not have the result of producing the trouble that he fears.

In the first place, the boiler is at all times full, and cold water cannot enter it except as hot water is drawn out, and, of course, the cold water does not discharge into the hot water, but at the bottom of the boiler, where the cold water stands.

Correspondent will note that when only the furnace is in operation, it will not be necessary to heat the contents of both boilers before hot water can be delivered at fixtures, for the reason that the flow from boiler B does not connect into the side of boiler A, but into the top. If anything is to be gained by making delivery still quicker, the furnace flow pipe could be connected at C on boiler B, although we do not favor this connection.

There is another consideration also. Very often when there is a furnace coil connection it is made with the idea that during the winter months the entire hot water supply is heated by the furnace coil without assistance

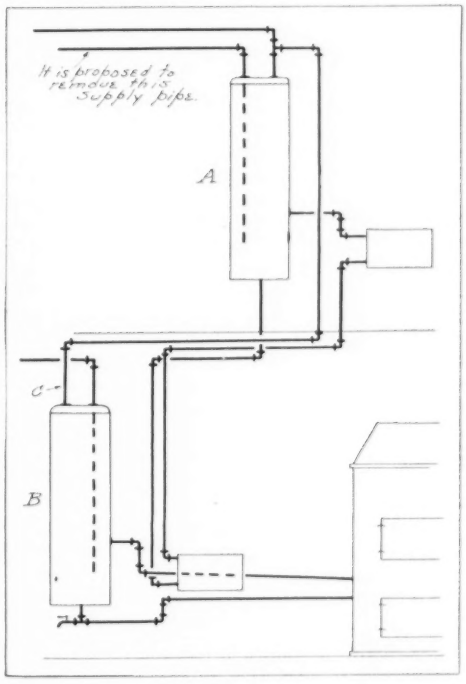


Fig. 1.

from any other source. If that is so in this case, undoubtedly the coil is of sufficient size to heat both boilers.

Another reason for using a separate supply on each boiler is that in the event of either boiler giving out, it can be valved so that while it is out of service the other supply can be in use.

DETECTING IRON IN WATER.

Iron can be detected in water by taste when there is one-half unit of it to a million units of water; and more than four or five units would make the water unpalatable. In some mineral springs iron is the constituent that gives the water its medicinal value, but ordinarily, says the Youth's Companion, it is undesirable. If more than 2.5 units in the million are present in the water that the laundress uses for laundering, the clothes will be stained. If more than two or three units in the million are in water that the paper maker uses, his paper will be stained. The ice made from the water that contains iron is cloudy and discolored. If much iron is in the water that the engineer uses for making steam, it will do harm, for it contains acids that, when set free in the boiler, corrode the boiler plates. The amount of iron carried in solution by most waters is, however, so small that the damage it does to steam boilers is generally not great. Water with a great deal of iron in it has in many instances caused great trouble and expense in city water works, for iron so favors the growth of crenothrix, a musty, stringy bacteria, that the pipes every little while become clogged with it.

The Tenth Annual Meeting of the American Society of Sanitary Engineering

Held in San Francisco, August 9-11, 1915

THE American Society of Sanitary Engineering held its tenth annual meeting in San Francisco, Cal., on August 9th, 10th and 11th. Through the courtesy of the Master Plumbers' Association of San Francisco the sessions were held in their hall at Page and Gough Streets. The headquarters were at Hotel Argonaut, where a good "live" bunch was always to be found between sessions. The delegation from the East arrived in a special car early on Monday morning, and after leaving the ladies at the hotel to become acquainted with the attractions of the shopping district, through the kindness of the Ladies' Auxiliary of the San Francisco delegation, the members proceeded to the hall.

The meeting was called to order promptly at 9:00 o'clock, and President Thos. G. Claffy immediately appointed the following committees:

Auditing Committee:—George Stoltz, A. J. McGookin and Robert Ellithorpe.

Resolution Committee:—John S. Kelly, Ph. Mueller and A. C. Shaver.

Convention City:—H. Y. Carson, L. A. Cornelius, J. S. Kelly, Ph. Mueller and George J. Dehn.

Hon. William C. Hassler, M. D., Health Officer of San Francisco, was then introduced and delivered a very able address, which really went to the heart of the whole public health movement, stating: "Your association has for its object the benefit of mankind, and your meeting in this city today is auspicious, not only in that it will be looked back upon as memorable of the event, which the world is celebrating in San Francisco, but of the good work your meeting will accomplish as a part of that great celebration." He pointed out the possibilities in San Francisco for its expansion and growth into one of the most magnificent cities of all ages. He pointed out the fact that they have profited by the mistakes of others. He also pointed out in strong terms the occupational diseases which accompany the complexity of our modern civilization, and the necessity for a sanitarian, a health officer and a medical man to watch this phase of our modern life very closely.

He mentioned San Francisco's battle with rats to prevent the introduction of the Bubonic plague, and that in doing so she had accomplished what Carroll, Reed and Lazear did for science respecting the relation of the mosquito to Yellow Fever and Malaria. He also said "Man realizes today that he is his own worst enemy, but until we can make him realize that he is individually responsible to the community and that neither his passion, liberty or right can infringe upon another, so long will we continue to pay one hundred million dollars annually for the care of 500,000 insane, blind, deaf and feeble-minded."

Profiting by the lesson of the earthquake, San Francisco revised its scheme of fire protection and city water supply. "Three-fourths of the water supply of the city is furnished by a privately owned corporation known as the Spring Valley Water Co., which furnishes 45,202,573 gallons daily, in addition to this the municipal wells and private wells supply an average of 10,000,000 gallons daily. Twice each month, and oftener when deemed necessary, the Board of Health examines chemically and bacteriologically, samples from the source and storage reservoirs."

He described the drainage system in detail, the city having a sanitary and separate storm system in the level districts, with two sewage pumping plants. The city also has an auxiliary water supply system with 72 miles of high pressure pipes, which stand a pressure of 230 pounds. In emergencies salt water can be supplied from two pumping stations with a capacity of 12,000 gallons per minute. This auxiliary system for fire fighting purposes has saved the city an enormous amount annually in insurance rates. The bathing beaches, swimming tanks, etc., are under the jurisdiction of the Health Department, and the water is tested in the laboratory at regular intervals. He said that San Francisco has not yet awakened to the cry for public comfort stations, but that with her splendid park systems she is ahead of the other important cities in providing for the outdoor recreation of the people.

President Claffy on behalf of the society expressed its gratitude to him for the excellent paper presented, and assured him that his interest in public health work was appreciated and that his paper showed his heart was in the right place.

The official address of welcome was delivered by Mr.

Members and Guests Attending the Tenth Annual Meeting of the American Society of

McAffee, secretary to His Honor, the Mayor, who was detained in court. It is needless to say that the welcome extended was whole-hearted and that the keys of the city were delivered to the society.

Mr. Chew's paper on "The Function of the Plumbing System and the Plumbing Inspector," was well received, showing his deep interest in the society and that his heart was still with the plumbing interests.

Monday Afternoon.

The afternoon session was called to order at 2 p. m. with all members present and their interest screwed to the sticking point. The secretary was unable to deliver his report for the reason that his trunk containing all reports, documents, etc., was delayed. President Claffy then delivered his address touching upon public health work, ventilation, drainage, comfort stations, structural conditions, rat proofing, etc., and the importance to the sanitary engineer, who wishes to be a success, of preparing his evidence so that it will stand the fire of court procedure. He pointed out that very often a great deal of good work is lost by reason of the lack of preparation of evidence or the proper maintenance of records in connection therewith.

This was followed by an excellent paper on "The Responsibility and Training of the Modern Sanitary Engineer," by Prof. Bateman, director of the Anglo-American Sanitary Correspondence College of Chicago. His treatment of the subject opened a new vein of thought to many of his hearers. It is believed that renewed interest and ambition will be stimulated in the minds of those who have heard or have read this excellent article.

Reports of committees was the next thing in order and the Committee on Research presented its opening report. That part of it relating to garage drains was discussed at considerable length and will form the basis of continued study by this committee during the following year. The elimination of volatile oils from sewage is a very difficult problem and one that cannot be definitely settled at this time. Another portion of this report referring to "The Venting of Plumbing Systems in High Buildings," which was accompanied by lantern slide illustrations, was of considerable interest, especially to many of those whose activities confine them to buildings of ordinary construction.

A paper on "Materials Used in House Sewers," which was illustrated, also held the attention of the meeting for a considerable length of time. Mr. Shaver's experiences and his success in defeating the advocates of tile pipe for house drains clearly showed the importance of preparing one's evidence in a logical manner. This subject was considered in connection with "The Relative Merits of Materials Used in Drainage Systems," by Jas. R. Walker, Waterbury, Conn., and with an illustrated report on "Corrosion," by H. Y. Carson, of New York. This was of exceedingly great interest and it is to be hoped that those who are connected in any way with sanitary engineering will avail themselves of the complete proceedings of this meeting to be published later.

"A Plea for the Use of Our Degree," by Prof. Bateman, was very favorably received.

Tuesday Morning.

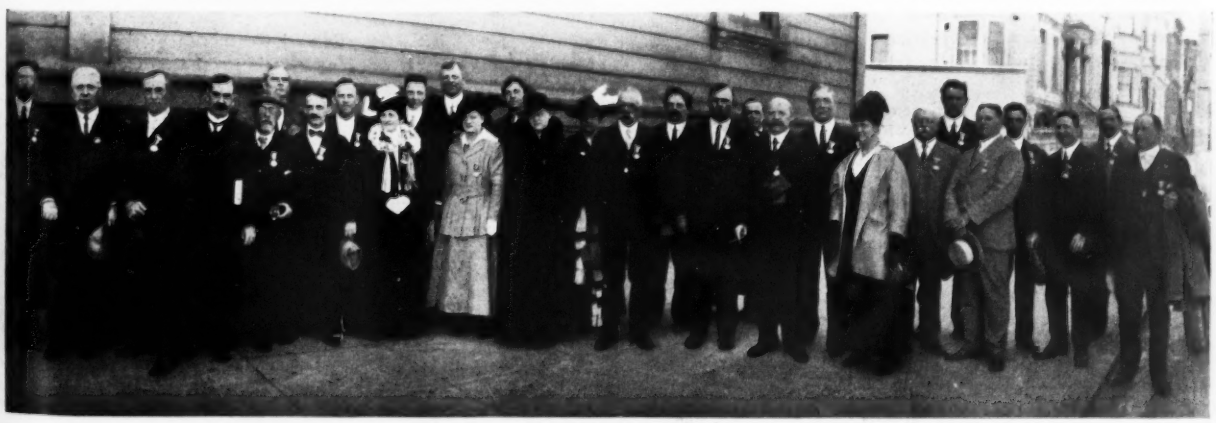
The meeting was called to order at 9 a. m. with a complete membership present. The secretary's report was read and referred to the Auditing Committee. Thirty-seven applications for membership were received. They were elected to membership as follows:

Active Members: Edward P. Burns, New Britain, Conn.; Leland S. Moore, San Diego, Cal.; Walter Bellon, San Diego, Cal.; John Campbell, Paterson, N. J.; Arthur Bateman, Chicago, Ill.; Harry L. Fulton, Pueblo, Cal.; August Gaspard, New Orleans, La.; F. W. Brand, St. Joseph, Mo.; Walter C. Morrissy, Galveston, Texas; P. B. Parr, Tulsa, Okla.; H. B. Gunther, San Bernardino, Cal.; John F. Kilkenny, Norristown, N. J.; F. B. Burke, Manila, P. I.

Associate Members: John B. Graeber, Brooklyn, N. Y.; Ray F. Fischer, Norman, Okla.; John Ballingdall, Detroit, Mich.; John Watson, Everett, Wash.; A. O. Nelson, Chicago, Ill.; L. W. Vaughan, Chicago, Ill.; Ernest M. Richter, Tarrytown, N. Y.; James Davis, Oshkosh, Wis.; Walter W. Colby, Lowell, Mass.; Francis L. Tinker, Battle Creek, Mich.; Martin H. Tewes, Houston Heights, Texas; C. W. Meneley, Urbana, Ill.; F. L. Tabor, Pittsburg, Kan.; Chas. B. Gamble, Pittsburg, Kan.; Anthony Tarrack, Chicago, Ill.; Maurice Doherty, Chicago, Ill.; George Twigg, Windsor, Conn.; Michael Langenfeld, Calvary, Wis.; Joseph Gerards, New York, N. Y.; D. P. French, Olney, Ill.; Paul Cummings, Chicago, Ill.; Jos. J. Crotty, Boston, Mass.; Matthew Rusch.

Contributing Members: A. M. Byers Co., Pittsburgh, Pa.

The meeting adjourned at an early hour and the members and their friends became the guests of the plumbers of San Francisco. We say "plumbers" for the reason that both organizations were represented, but the hosts at this particular time were the master plumbers. An automobile trip through Golden Gate Park will long be remembered by those who were lucky enough to be there. It is without exception one of the most beautiful parks in this country, showing in landscape effects, di-



Sanitary Engineering, Held at San Francisco, California, August 9, 10 and 11, 1915.

versity of foliage, tropical plants and trees, and the beauty of its flower beds, the rare genius on the part of the sturdy pioneers, who planted so rare a paradise in the midst of what had been a desert.

Tuesday Afternoon.

The view of the Pacific Ocean from Ocean Boulevard, with the Cliff House, Sutro Baths, and the Golden Gate at its northern extremity, was very much enhanced by the lazy swing of the enormous sails of the Old Dutch Windmill at the foot of the sand hills. There is springing into existence a beautiful new residential section known as Ingleside Terrace on the hills overlooking the placid Pacific and the Golden Gate on the north, which for the beauty of its setting and the good taste exhibited in architectural effects in good solid American homes, would compare favorably with the best efforts of any other city. A luncheon at the Cliff House, famed throughout the world, laid the foundation for a strenuous afternoon at the Fair.

The society became the guests of the Exposition Commissioners at Festival Hall at 2:30 p. m., where they were welcomed by Hon. Chas. A. Vogelsang, one of the commissioners, who presented them with a commemorative medal. In his address he briefly referred to the part played by the sanitary engineer in contributing to the success of the digging of the Panama Canal. His remarks about the early pioneers and their struggles with the elements in planting a city amid the sand dunes of the Pacific Coast touched a responsive cord in the breasts of all who heard him. Afterwards the day was spent in studying the exhibits, but far greater interest was taken in the architectural effects of the buildings, the lighting, the color scheme and the horticultural effects. The whole exposition is one grand fairy land and the finishing touch was contributed by the wondrous flights of the "bird man" from Buenos Ayres, who seemed to be equally at home, head down or head up.

Tuesday Evening.

In the evening a dinner-party was arranged at the "Inside Inn," where all the wanderers from home cheered themselves with the wine from California's immortal hills and drank to the health and happiness and continued prosperity of California's sturdy sons and her fair and beautiful daughters. A chivalric western spirit would not allow those present to forget the "Girls We Left Behind" and so the wine again did flow.

Wednesday Morning.

The meeting was called to order promptly at 9 a. m. with all members present and alert for business. A paper by Prof. Horace C. Griswold, of the University of California, on "The Elements of Sanitary Engineering for Plumbing Apprentices," was a master piece and was given close attention by everyone present. It affords a subject for deep study and covers the whole field in a complete and masterful fashion. A vote of thanks was tendered the professor for his excellent work.

A masterly address by J. L. E. Firmin, secretary of the Master Plumbers' Association of San Francisco, held the members at close attention for upwards of an hour. His account of the struggles of the early pioneers in that section of the West was listened to with great interest. He is a man of varied and wide experience in plumbing and drainage and can speak with authority. He touched upon the report of the Sanitary Committee of the National Master Plumbers' Association for 1908 in a way that drew hearty applause from his audience.

A communication from the Canadian Institute of Sanitary Engineers was received, referring to the "Standardization of Cast Iron Pipe and Fittings," and placed on file. This society having adopted a standard for such pipe and fittings, known as the "Naco" standard, the basis of which was submitted at the Milwaukee meeting in 1911, it was not considered necessary at this time to amend the specifications adopted.

A resolution was submitted by Mr. Groeniger thanking the San Francisco master plumbers for the courtesy and elaborate manner in which the society was treated. The same resolution was extended to the journeymen plumbers and the plumbing inspectors. Three cheers and a tiger were given for that veteran, Thos. J. Farrell, and for his colleagues for their unremitting efforts to make this meeting a success in every respect.

The matter of a national plumbing code submitted by the committee on this subject was discussed at considerable length. It was agreed that the end sought for was a standard of national plumbing practices, and a motion by Mr. Groeniger that the next committee on this

The Commemorative Medal.—The Reverse bears this Inscription: "In Commemoration, Panama-Pacific Exposition, San Francisco."

subject prepare a code of such national standard, which would be applicable in any city or town in the United States on standards, which would form the basis of all plumbing codes, and that a prize be offered by the society for the best form submitted on these lines, was adopted.

The report of the Committee on Bubbling Fountains, submitted by the chairman, Mr. Mueller, with their recommendations, was approved. The report and recommendations in effect were that a sanitary drinking fountain nozzle should be so constructed that the users lips cannot touch any part of it without getting water in such amounts as to fill his nostrils and wet his face; the effect of this would be to prevent touching the nozzle with the lips. Also that a pressure regulator be provided and that the valves operating such a fountain should be foot actuated.

A paper on "The Plumbing Apprentice," by Harold L. Holbrook, of New York City, opened up new lines of thought on this important subject and showed the necessity of giving close attention to the education and training of plumbing apprentices.

A paper by A. E. Hansen, B. S., of Lederle & Provost, sanitary and hydraulic engineers, of New York City, on "Plumbing Work," described the functions of a plumbing system, the sanitary engineer's connection with the physician, medical man, scientist and health officer. The close relation each one bears to the other in public health work is of no greater importance than the problem of drain air, gases, etc., in plumbing and drainage

systems. He explained in detail the gases to be found in such systems, their corrosive effects on metals, and discussed at length the design, installation, and maintenance of plumbing and drainage systems. This paper is of such an excellent character that it is hoped it will appear in full very shortly in the proceedings of this meeting.

The Committee on Convention City recommended Newark, N. J., and New York City for the consideration of the members. Newark was selected as the place for the next annual meeting.

The report of the board of directors, which had been deferred, was submitted and approved.

The Election of Officers.

The election of officers concluded the business of the day. All the old officers were unanimously re-elected, except that Mr. McGookin was elected eighth vice-president and Mr. Stoltz tenth vice-president.

The list of officers is therefore now as follows:

President, Thomas J. Claffy, Chicago.

Secretary-Treasurer, L. J. Lawler, Pittsburgh, Pa.

First Vice-President, Thomas Farrell, San Francisco.

Second Vice-President, W. H. Jennish, Waterloo, Iowa.

Third Vice-President, Chas. F. Walther, St. Louis, Mo.

Fourth Vice-President, William J. Devine, Elizabeth, N. J.

Fifth Vice-President, F. W. Cloutier, Minneapolis.

Sixth Vice-President, W. C. Groeniger, Columbus, Ohio.

Seventh Vice-President, Jacob Boll, Dallas, Texas.

Eighth Vice-President, A. J. McGookin.

Ninth Vice-President, James R. Walker, Waterbury, Conn.

Tenth Vice-President, Geo. R. Stoltz, Milwaukee, Wis.

Directors: James S. McGrath, Louisville, Ky.; Louis A. Williamson, Joliet, Ill.; Otto Meinert, Davenport, Ia.

Following the election the meeting adjourned.

This will be long remembered as one of the most successful meetings ever held by the society. The interest of the members, their appreciation of the business in hand, and their efforts to fulfill their obligations in a conscientious manner were apparent at all times. A very pleasant trip to San Francisco was reported by those who comprised the party on the private car. Stop overs were made at Denver, Colorado Springs and Salt Lake City. The Great American Desert, with its burning sands, its alkali beds, and its wonderful mirages, formed an ever changing panorama entirely new to the members from the effete East.

UTAH COURT DISMISSES CONSPIRACY SUIT.

Judge John A. Marshall, of Salt Lake City, Utah, recently dismissed the suit which was filed last March in the Federal Court in that city by the Wm. J. Wright Corporation against Jesse Coogan, Frank G. Carey, William Rossiter, John Dudley, William Bywater, Fred Spencer and Otto Ashbridge, all members of the Salt Lake City Association of Master Steam and Hot Water Fitters. The plaintiff had alleged that the defendants had conspired to prevent it from securing the contract in the heating and plumbing work in the Fifteenth East School Building. The suit was dismissed almost immediately upon the first hearing as Judge Marshall stated that there was no course for action as same was not an interstate matter and that the suit should be brought in the District Court if at all. Since the dismissal of the suit nothing further has been heard from the complainant.

Moorhead, Minn.—The Moorhead Plumbing & Heating Co. has secured the contract for heating and plumbing in the consolidated school at Felton.

Obituary

Moses Weinberg.

Moses Weinberg, who conducted a plumbing business in Youngstown, Ohio, but maintained his home in Kane, Pa., died in the latter city on Thursday evening, August 19th. His widow and four children survive him.

Harry A. Chisholm, Sr.

Harry A. Chisholm, Sr., for the last six years plumbing inspector in Spokane, Wash., died at his home in that city on Thursday, August 12th, in his fifth-eighth year, after being confined to his home with heart trouble for two weeks. His wife and four sons survive him.

Henry May.

Henry May, formerly a well known Louisville plumber, who for the last eight years has been in Denver, Colo., died recently in that city. The remains were brought to Louisville and the funeral services were held at St. Paul's Church, interment being in St. Michael's Cemetery. Mr. May was in his forty-sixth year and is survived by his widow and a sister.

George T. Downing.

George T. Downing, a retired master plumber of Pasadena, Cal., died Saturday, August 14th, at the Pasadena hospital, after an illness of four months. He was a veteran of the Civil War, and the funeral services, which were held Tuesday, August 17th, were conducted under the auspices of the local G. A. R. John F. Godfrey Post. Mr. Downing was born in Troy, N. Y., and was seventy-four years of age. He is survived by his wife, one daughter and two sons.

GOVERNMENT CONTRACTS TO BE AWARDED.

Acting Supervising Architect James A. Wetmore, Treasury Department, Washington, D. C., will receive sealed proposals for government work as follows:

Until 3 p. m., September 20, 1915, for the construction complete, including plumbing, heating and lighting, of an attendants' quarters, disinfecting shed, oil house, wharf, etc., for the quarantine station at Tampa Bay, Fla. The buildings are one-story frame structures, with a total ground area of 7,600 square feet.

Until 3. p. m., September 27, 1915, for the construction complete, including plumbing, heating, lighting and approaches, of a two-story and basement stone-faced building of 28,700 square feet ground area, fireproof construction, composition, tin and copper roof, for the United States postoffice and court house at Tulsa, Okla.

Until 3 p. m., September 28, 1915, for the extension and remodeling, including plumbing, heating, lighting and approaches, of the United States postoffice and court house at Harrisburg, Pa.

Until 3 p. m., September 29, 1915, for the construction complete, including plumbing, heating, lighting and approaches, of the United States postoffice at Smyrna, Del. One-story and basement building; ground area, 2,200 square feet, first floor and ceiling fireproof; stone and brick facing with wood cornice, etc., tin roof.

Plans and specifications for the above buildings may be obtained from the custodians of the different sites or at the office of the Supervising Architect in Washington, D. C.

Trade's Picnic Season in Full Swing

Master Plumbers' Associations in Many Parts of the Country Hold Successful Outings

PITTSTON MASTER PLUMBERS HOLD SUCCESSFUL OUTING.

The annual outing of the Pittston and Vicinity Master Plumbers' Association was held Saturday, August 21st, at Glendale, Pa., a delightful spot in the Bald Mountain Valley. The weather was somewhat threatening in the

Members of the Master Plumbers' and the Supply Men's Baseball Teams at Pittston Master Plumbers' Outing, in Bald Mountain Valley, Glendale, Pa.

morning, but by noon Old Sol's rays began to show through the tall pines and fine picnic weather prevailed during the remainder of the day. An elaborate, breakfast was served at 9 a. m., at which hour most of the local members had arrived, and at two o'clock in the afternoon a clam dinner was enjoyed.

A program of sports was arranged, chief among which

The Arrangement Committee for the Pittston Master Plumbers' Outing.—From left to right in the top row they are: George V. Webber, C. F. Druffner and Martin Gilroy. In bottom row are: William A. Judge, W. W. Lewis and Alexander Sloan.

was a baseball game between the master plumbers and the supply men, the master plumbers winning by a score of 10 to 8. The battery for the master plumbers was William A. Judge, pitcher; Alex Sloan, catcher; and for the supply men, Joseph F. Evans, of the Wyoming Valley Supply Co., pitcher; John Reilly, of the Keystone Supply Mfg. Co., catcher. John Gilroy's sensational catch in the right field and Willis Miller's home run drive to center field were the thrilling features of the game.

In a tug of war between the master plumbers and the supply men, the supply men proved their superiority. C. F. Druffner won the laurels in the fat men's race, his opponent being F. J. McCann. Joseph Warren, of the R. C. McClure Co., was winner in the free for all chicken race and William Broughton, of the R. E. Weeks Co., won the 100-yard dash also participated in by George V. Webber and Martin Gilroy. A quoit pitching contest was held at which the master plumbers were acclaimed victors when George S. Bray and Richard Turner, representing the association, won two out of the series of three games. Ernest Zurfush, of the Eastern Specialty Co., and A. S. Powers, of the Powers Wholesale Supply House, represented the supply men on the opposing team. All present were loud in their praise of the work of the arrangement committee, which was composed of the following members: Alex Sloan, Jr., William A. Judge, George V. Webber, C. F. Druffner, Martin Gilroy and W. W. Lewis.

BOSTON PLUMBERS' ANNUAL OUTING.

With national and state officers participating, the Master Plumbers' Association of Boston and Vicinity held its annual outing at Nantasket Beach, on Wednesday, August 18th. Three hundred strong, the members, their families and other guests, embarked on the steamer "Old Colony," of the Nantasket Beach Steamboat Line, at Rowe's Wharf at 10:15 in the morning, and from then until long after dark, it was a gala day for all concerned.

A baseball game was the first number on the program, in which the master plumbers and the salesmen battled for seven long innings, the official scorekeeper declaring the salesmen winners by a score of 18 to 3. The game provided plenty of thrills and amusing features, the work of Umpires Hirchfield and Devers calling forth peals of laughter from the spectators. Although the game started at 11:30 a. m., it was nearly two hours before either side was willing to call it "quits."

Dinner was next on the program, and to say the least the menu was all that could have been desired. A feature of the dinner was a bevy of pretty and winsome cabaret girls who entertained with song and dance during the courses.

At the head table were seated: Mr. and Mrs. J. Preston Perham, of Boston; John B. Feehan, of Lynn; Mr. and Mrs. J. S. Cassedy, of Cambridge; W. Emmet Crosby, of Cambridge; Walter P. Jones, president of the Boston Association; Mr. and Mrs. O. C. Poole, of Boston; Mr. and Mrs. P. A. Lang and Master Joseph Lang; David Craig, former national president, of Boston, with his daughters, Miss Mary Craig and Miss Dorothy Craig, and last but not least, Isaac Riley, 82 years of age, the oldest master plumber in the city of Boston.

Following the dinner Walter P. Jones, president of the Boston Association, acted as toastmaster, and many witty remarks were made by the various speakers, among whom were National President Cassedy and State President

Feehan. Further speeches were "called off," as it was getting late, and a list of field sports were waiting to be disposed of.

The boys 'race, with eight starters, was the first on the program, and James Hickey of Roslindale won this easily, being awarded a fine pearl-handled pocket knife.

Tearing down the 75-yard stretch with a stride and form that would have put many a professional to shame, Miss Julia Brady, of Hampton Hill, Nantasket, easily outdistanced all the other ladies and girls, winning by a margin of ten feet. She received a five-pound box of chocolates.

The fat men's race provided all sorts of fun. Frank Leary, of the Jas. Barrett Mfg. Co., Boston, and William Crozier of Boston, were locked in a dead heat when they reached the finish line and the event declared a draw. After a rest of some ten minutes Leary and Crozier went back to the starting line and prepared to do the race over again, although both were visibly tired. Crozier was many pounds heavier than his opponent, but gave him such a close race in the second dash that Leary had great trouble in winning by a margin of less than a foot. A fine beer stein was the trophy for the winner.

A 100-yard dash open to all the men was the next event and Frank Curtin of Medford, son of A. F. Curtin, won by a margin of three feet. He also received a stein for his trouble.

In a similar event for "Master Plumbers Only," F. J. Murphy of Boston won "hands down." A stein was the prize in this race.

Andrew Curtin won the potato race for boys, while in the same event "For Plumbers Only," three heats were necessary before Ralph Sheriff and Frank Kirby gave way to Andrew Curtin, when he won the finals.

The ball throwing contest, which consisted of attempting to place six tennis balls in a fine copper urn from a distance of about ten feet, was entered into by about fifty lady contestants and narrowed down to a contest between Mrs. D. J. Duggan, of Boston, and Marie Duggan, of Dorchester. They tossed the balls for about fifteen minutes, amidst the coaching of all those assembled and finally Mrs. Duggan succeeded in getting three balls in at a distance of 8 feet, while Miss Duggan could place but two. The fine urn, a valuable one, was the prize.

In the croquet competition, for a croquet set, a nice shiny new one, Mrs. J. P. Perham won out from a field of seven other ladies. She completed the course in 25 strokes.

In the baseball throwing contest for women, Miss Julia Brady again proved herself the star feminine athlete among those present, when she heaved the ball a distance of 75 feet, on her first throw, a pitch which the other contestants, and there were more than 40 of them, failed to approach. A fine trophy was her prize.

In all the events Nicholas J. Kelley, of Boston, acted as official starter, while J. Preston Perham was the judge at the finish.

After the athletic events were closed, the official program of the day was completed. Many of the guests, however, arranged to spend the evening at Paragon Park. Most of the party left, however, on the 7:15 and 8:15 boats, after voting the day a grand success.

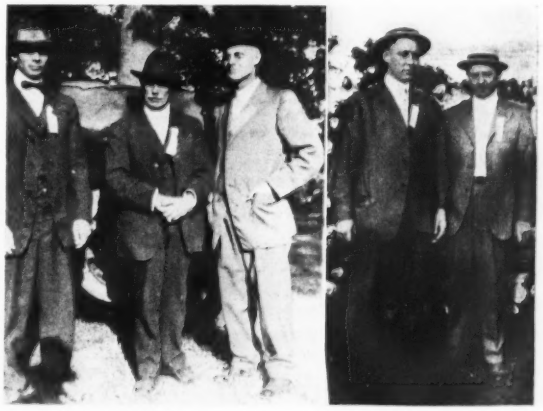
The committee in charge of the affair consisted of: Charles H. Smith, chairman; Orren C. Poole, J. Preston Perham, Nicholas J. Kelley, Frank J. Callan, C. J. Murphy, Walter P. Jones, Frank B. Connor, John W. Zehringer, John J. Vogel, and Andrew F. Curtin, all of Boston and vicinity.

SEVENTH ANNUAL PICNIC OF WESTERN PLUMBING AND HEATING LEAGUE.

Over two hundred members, their families and other guests attended the seventh annual picnic of the Western Plumbing and Heating League, held at Fox River Park, Aurora, Ill., on Wednesday, August 25th.

Ideal weather favored the picnic folks, many of whom journeyed to the park in automobiles, while others arrived by trolley. Master plumbers from Aurora, Joliet, Elmhurst, Mason City and St. Charles, were early arrivals at the grounds.

Dinner was served to the picnickers at 12 o'clock in the spacious pavilion. Elaborate and appetizing courses were served, including some famously good roast beef,



At Western Plumbing and Heating League's Outing.—From left to right they are: M. F. Runge, Elgin; W. J. Taylor, Riverside; R. W. Bridge, Elgin; E. J. Farrell, Aurora, Chairman of the Outing Committee; and J. L. Robertson, Mason City, President of the Illinois Master Plumbers' Association.

which everybody keenly appreciated. Delicious refreshments were served during the day to all who confessed to "parched throats."

The roller coaster, the figure eight, and the merry-go-round were not brought into commission this year. The children contented themselves with romping on the large playground, participating in the games and races, and in devouring ice cream cones and candy in wholesale fashion.

State President Robertson Present.

The guest of honor at the outing was John L. Robertson, of Mason City, president of the Illinois Master Plumbers' Association. He was warmly greeted by members, some of whom had not grasped his hand since the state convention in Springfield in January. Mr. Robertson drove from Mason City to the outing ground in his trusty "young" Ford.

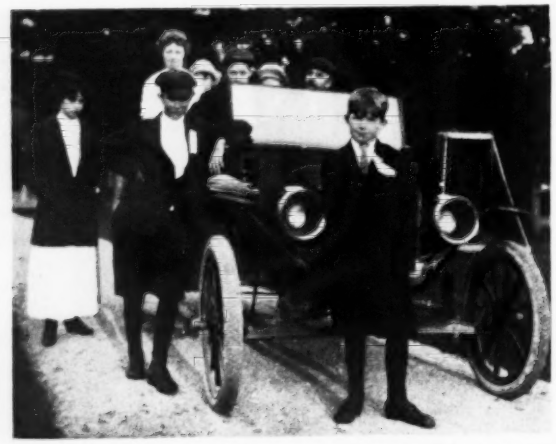
Fox River Park is one of the most picturesque spots in the Fox River Valley, and an ideal place for outdoor recreation. Tall shade trees are scattered about throughout the park, while nearby flow the placid waters of the Fox River. In these rustic surroundings the picnickers found a day of delightful and wholesome pleasures.

Joliet Wins Baseball Game.

Following the dinner at the pavilion, practically all of the picnickers repaired to the baseball grounds adjoining the park, where a large grand stand was at their disposal. For two hours the spectators, shouting for their respective teams, watched a fast and clever match between the Aurora and Joliet Master Plumbers, which finally culminated in victory for Joliet, the score being 20 to 16.

During the races later in the afternoon, the first prize

winners were as follows: Fat Man's Jumping Race, won by Fred Schoeberling, Aurora; prize, six fine linen handkerchiefs. Lean Man's Backward Race, won by E. R. Ravell, Aurora; prize, one pair silk hose. Boys' Race, 12 and under, won by Wm. Winchell, Aurora; prize, pocket knife. Married Ladies' Race, won by Mrs. L. Wilhelmi, Joliet; prize, one pair black silk stockings. Single Ladies'



W. J. Hilliard, of Elmhurst, and His "Ford Family."

Race, won by Miss Poehner, Joliet; prize, a bottle of perfume. Girls' Race, 12 and under, won by Miss Glumb, Joliet; prize, hair bow and clasp. Ladies' Race, free-for-all, won by Miss Alletta Laramie, Joliet; prize, 2 pound box of chocolates. Men's Race, free-for-all, won by Carl Kohlert, St. Charles; prize, box of cigars. Extra Men's Race, free-for-all, won by Leo Wilhelmi, Joliet; prize, one griddle. Extra Ladies' Race, free-for-all, won by

Miss Berniere Laramie, of Chicago; W. C. Haviland, of Aurora, Secretary of the Illinois Master Plumbers' Association; and Miss Bessie Hilliard, of Elmhurst.

Mrs. Leo Wilhelmi, Joliet; prize, one griddle (making two orders of griddle cakes for the Wilhelmi family next January).

One of the exceedingly busy men at the outing was E. J. Farrell, secretary of the Aurora association, and chairman of the outing committee. E. J. had the official responsibility of recording the winners of the various races and of awarding the different prizes.

TOLEDO MASTER PLUMBERS' ANNUAL SUMMER OUTING.

The annual picnic of the Master Plumbers and Journeymen of Toledo, O., was held Saturday, August 21st, at the well known and popular Cedar Point resort. There were about 500 members in the party which left Toledo at 7:30 a. m., arriving at Cedar Point an hour later. Many of the party brought basket lunches which they enjoyed in the beautiful grove especially adapted to such purposes. Others feasted at the Hotel Breakers, and many patronized the resort restaurants and cafes. A trip was taken to the Soldiers' Home, this being a big feature of the day. "Billy" Girkins was accused of joining the rocking chair brigade at the Hotel Breakers, and Billy Wacker, Eb Ellen and Frank Klein won the everlasting enmity of some of their friends because they could not be induced to leave the secluded spot where they chose to talk over the days of "auld lang syne." Johnny Brooks was said to have spent a good portion of the day on the Merry-Go-Round although he indignantly denied the allegation. With such quiet amusements did some of the boys entertain themselves, and numbers of others hied themselves to the bathing beach. It was a great day and a tired but happy crowd returned to Toledo that night, declaring that it was the "best ever."

COMPLIMENTS "DOMESTIC ENGINEERING" AS MASTER PLUMBERS' CHAMPION.

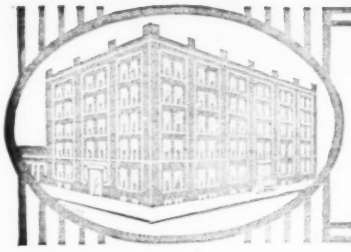
At the annual outing of the Haverhill Master Plumbers' Association, held at Centennial Grove, Mass., August 8th, President J. B. Feehan, of the Massachusetts Association of Master Plumbers, who was present as a guest, referred to "Domestic Engineering," in an address, as the publication which ably refutes the caustic remarks that are made against the plumbing profession in the joke columns of newspapers and on the stage, etc. Vice-President Bradford, of the state association, also complimented "Domestic Engineering" on its campaign to squelch the ridicule and abuse which is often directed against the craft.

Negaunee, Mich.—John A. Washmut & Sons have been awarded the contract for remodeling the plumbing in the Park and Jackson school buildings. The contract amounts to $1,399.47.

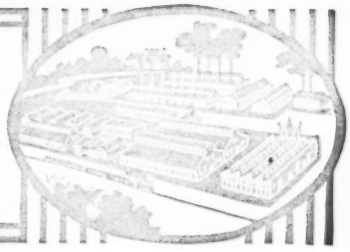
Kansas City, Mo.—The John Kitchen Heating Co., of this city, has been awarded the contract for the installation of a heating and ventilating system in the Lincoln School, at Leavenworth, Kan.

Grand Rapids, Mich.—The Pulte Plumbing & Heating Co. has been awarded the following contracts: Plumbing the new South High School, the Herpolsheimer Building, the Standard Oil office building, and A. H. Shank's residence; and the plumbing and heating in the Majestic Theater.

Waterloo, Iowa.—Zook & Bentz, of this city, have secured the contract for plumbing and heating a public school building, to be erected at La Porte City, Iowa. Consideration $5,675. This firm was also awarded the contract for plumbing and heating a public school building now being constructed in this city. Consideration $8,400.



Among the Wholesalers and Manufacturers



OPENS BRANCH OFFICE AT COLUMBUS, OHIO.

The Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has recently opened a branch office in the Arcade Building, at Columbus, Ohio. The office is in charge of D. E. Cassin, special representative of the company.

BUILDING FIREPROOF FACTORY.

The Yoder-Thomas Mfg. Co., Engineers Building, Cleveland, O., is erecting a new fireproof factory at West 55th and Walworth Streets, in that city. The building will be 50x150 feet, and it is to be ready for occupancy by October 1st.

J. A. COCHRANE CALLED BY DEATH.

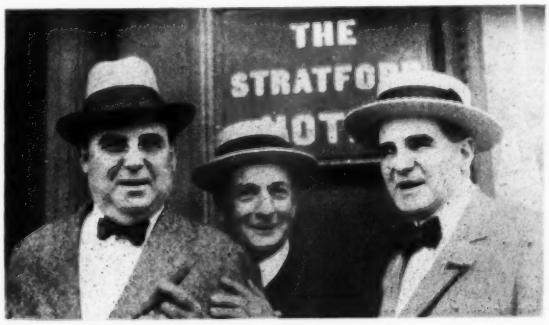
J. A. Cochrane, president of the Cochrane Brass Mfg. Co., of Cleveland, O., died in that city on August 20th. Mr. Cochrane, who had many friends in the trade, had been identified with the manufacture of plumbers' brass goods and steamfitters' supplies for many years.

OPENS MANUFACTURERS' AGENCY.

Benjamin Mills has established himself as a manufacturers' agent at 103 Park Avenue, New York City, representing the Marietta Holloware & Enameling Co., manufacturers of enameled laundry tray covers and medicine cabinets. He will also represent the seat department of the Columbus Brass Co., Columbus, Ohio.

HEATING AND VENTILATING ENGINEERS TO MEET AT ATLANTIC CITY, N. J.

The American Society of Heating and Ventilating Engineers will hold its annual summer meeting at Atlantic City, N. J., instead of San Francisco, Cal., as had been originally planned. Following an official canvass of the membership of the society, it was shown that most of the members failed to approve of San Francisco owing to the distance involved. The Council of the society has designated September 16th and 17th as the dates for the meeting. It is anticipated that a representative aggregation of members and others in the heating and ventilating field will be present.



At the Summer Meeting of the Central Supply Association.—From left to right: E. V. Brigham, of the Enameled Tank Co., Kalamazoo, Mich.; B. O. Tilden, of the American Sanitary Works, New York City; and Sam O. Dugger, of the Shirley Radiator & Foundry Co., Indianapolis, Ind.

BRAZIL'S MARKET FOR AMERICAN PIPE AND FITTINGS.

United States Consul General Alfred L. M. Gottschalk, of Rio de Janeiro, Brazil, reports that frequent inquiries are received from American manufacturers of pipe and fittings, who, by reason of disturbed business conditions in Europe, are apparently making an effort to obtain a share of the Brazilian trade in these commodities, which have in the past been almost entirely supplied by European manufacturers. The importations of these articles during the past two years into Brazil were:

	1913.		1914.	
Country of origin.	Quantity. Metric tons.	Value.	Quantity. Metric tons.	Value.
United States	3,416	$ 365,182	2,280	$ 178,065
Great Britain	24,182	1,614,654	6,801	584,414
Germany	20,828	1,507,784	10,396	602,676
France	17,020	630,139	17,830	678,779
All others	8,015	374,485	12,388	402,775
Total	73,461	$4,492,244	49,695	$2,446,709

The total length of the various kinds of pipe of the several sizes represented in the water system of Rio de Janeiro, according to the latest report, are 756.36 miles of cast-iron pipe, 5.52 miles of steel pipe, 40.4 miles of galvanized iron, and 101.4 of lead pipe, a total of 903.68 miles.

A table showing the amount in use of each size of pipe, with the figures representing the respective diameters, and a statement of specifications for pipes, may be inspected at the Bureau of Foreign and Domestic Commerce or its branch offices.

AMERICAN BUILDERS' WEEK AT THE EXPOSITION.

It begins to look as though the Builders of San Francisco were going to turn the town over to the visiting Builders during American Builders' Week, October 18th to 23rd. We learn that they have reserved the largest ballroom at the famous Palace Hotel for a down-town social headquarters. The ballroom at the Inside Inn will be the social headquarters inside the Exposition grounds. The magnificent new municipal auditorium at the Civic Center, capable of accommodating easily over 5,000 couples on the floor at the same time, has been engaged for the grand opening Builders' Ball. California's beautiful State Building inside the Exposition grounds has been secured for a reception to the ladies, while the men folks are absorbing wisdom in convention and in other

ways. On Saturday evening, October 23rd, the week's business and ceremonies will terminate in a grand banquet at the Palace Hotel at which it is expected covers will be laid for 3,000 Builders, and which will undoubtedly be the greatest gathering of its kind in the history of the world. Responses from all branches of the building business from all over the country are pouring in by mail, and those of our readers who intend participating in the festivities of Builders' Week are urged to at once secure their transportation, or they may, owing to the popularity of this unique event, suffer disappointment later. We are asked to state that the secretaries of all organizations identified with the building industry should, as early as possible, confer with their members as to their attendance, and send their reports to E. T. Thurston, Secretary of the General Committee, American Builders' Week, 57 Post Street, San Francisco. It has been suggested that organizations of employers allied to the building business who contemplate visiting the Exposition in a body should, if in any way possible, time their visit so as to bring it within the period designated by the National Association of Builders' Exchanges as American Builders' Week, October 18th to 23rd.

UNITED STATES THE GREATEST USER OF ASBESTOS.

Asbestos is a potential life saver. We do not all realize, perhaps, that the fireproof theater curtain is made of asbestos, which is rock matter, but neverthless almost as soft and pliable as cotton or woolen fabric, says Commerce Reports. Asbestos has, of course, many other uses. Its incombustibility and its fibrous structure make it one of the most useful minerals for many and various structural purposes. It is used in making pipe covering, roofing, plaster and stucco. Houses that are built largely of asbestos afford their occupants not only complete protection from fire because it is a "nonconductor," but assure them also the comfort of freedom from extreme heat and cold. The abestos producing industry of the United States is growing. For many years we have been the greatest manufacturers and users of asbestos, drawing our raw material from Canada (76,365 tons, value $1,651,471, during the fiscal year 1914), but we are now getting some excellent fiber in our own country. The most notable feature of the asbestos industry in 1914 was the development of a new field in Arizona, which is furnishing a grade of fiber that compares very favorably with the Canadian. As the mineral occurs in the Grand Canyon, it is frequently designated Grand Canyon asbestos, although the deposit in that remarkable natural wonder is not yet producing asbestos commercially. For electric installation the Arizona asbestos is even better than the Canadian product, for it contains a lower percentage of iron. Asbestos of a low grade has been produced in Georgia for many years. A report by the United States geological survey on the production of asbestos shows that in 1914 the United States produced and sold 1,247 short tons, valued at $18,965, a gain of 13 per cent in quantity and 72 per cent in value as compared with the production of 1913. Besides the small production in California and Virginia, there were three important producers—two in Georgia, who furnished the greater portion, and one in Arizona, who produced high-grade material only. In manufactures of asbestos the import (chiefly from Great Britain and Germany) totaled $391,337 in value during the year ended June 30, 1914. Exports of asbestos manufacturers from the United States totaled $687,073 during the same year.

Personal Mention

In ye olden days a man's name indicated his occupation or temperament, according to historic lore. Indians, for instance, were usually named to conform to some personal trait or pursuit which they followed. If a red man was called "Kill Deer," it denoted that he was rated "A 1" as a hunter of the fleet-footed beasts of the forest, but in modern times names are deceptive, for a man may call himself Small, and yet be a big chap, and again he may rejoice in the name of Strong and be a weak-kneed gentleman. And now the signature Baker as you gaze at it in cold ink, may lead you to think that it stands for a dozen things from muck raker to order taker. The latter thought is right, especially if you gaze at the signature of Francis J. Baker, president of the George H. Tay Co., jobbers in plumbing and heating supplies, at San Francisco. Baker be it known is some order taker as well as some business maker. These hustling traits bespeak the executive temperament, and account for the fact that Baker was made president of the Tay concern following the decease of Mr. Tay. He is well known to the trade, and outside of being an order taker, he is also a train taker (is Baker) for 'tis said that he has traveled extensively and has been seeing America first.

Francis J. Baker, President of the George H. Tay Co., San Francisco, Cal.

Lou Brennan, president of the Victor Brass Mfg. Co., of Cleveland, O., is spending the week in Pittsburgh among the master plumbers.

L. W. Tilden, central states representative for the Detroit Brass Works, of Detroit, Mich., has just started on a thirty-days' trip through Illinois, Iowa, Nebraska and Minnesota.

C. E Burnett, sales manager of the Vaile-Kimes Co., Dayton, O., is wearing a healthy coat of tan which he took on while motoring about among Michigan resorts during the first two weeks of this month.

Wm. L. Deming, of the Deming Co., Salem, O., is spending a couple of very enjoyable weeks on a yachting trip among the Great Lakes this month. W. L. is said to be one of the best dry land sailors in Ohio and is well versed in all branches of boat-ology.

The accompanying cut is the exact size of the photograph which the United States Government requires to be attached to all passports since the fraudulent passport incidents which caused so much trouble during the early part of the European conflict. This photograph of John S. Hopkins was secured for a passport necessary for the

John S. Hopkins, President and Treasurer of the Never Split Seat Co., of Evansville, Ind.

closing of a big foreign contract. Mr. Hopkins is to be congratulated on this business. No trouble is anticipated in making deliveries since it would be a war-crazed government indeed which would declare closet seats to be contraband. This is the first photograph ever published of Mr. Hopkins, who is well known to the trade as president and treasurer of the Never Split Seat Co., of Evansville, Ind.

W. G. Coxson of the Great Western Potteries division of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has recently returned to his office at Kokomo, Ind., after an extended trip through the West, including a visit to the Panama-Pacific Exposition.

KITSON CO. ISSUES NEW CATALOGUE.

The Kitson Co., of 2815-2827 Oakford Street, Philadelphia, has just issued a new catalogue, illustrating and describing its products, including ground key cocks for water and gas, bath traps, boiler couplings, draw-off cocks, etc. The catalogue consists of 132 pages, and it is gotten up in an attractive manner.

EXECUTIVE OFFICE OF N. A. M. P. MOVED TO CAMBRIDGE, MASS.

The executive office of the National Association of Master Plumbers has been moved from Philadelphia to Cambridge, Mass., where it is located at 689 Massachusetts Avenue, directly across the street from President James S. Cassedy's office. The new office is located on the second floor of the Savings Bank Building in light and attractive rooms. Executive Clerk W. Emmet Crosby is at present busy preparing the proceedings of the Chicago convention for publication.

A NEW "C. & L." KEROSENE FIRE POT.

The Clayton & Lambert Mfg. Co., of Detroit, Mich., has recently placed a new kerosene fire pot on the market under the name of the "C. & L." No. 222. The hood of this fire pot is made of heavy sheet steel and is removable and will accommodate two large-sized soldering coppers and heat them quickly. The burner is made with a powerful generator that burns the fuel perfectly, producing maximum heat without any smoke or odor. The tank is made of welded steel and is practically indestructible. The pump is extra large and produces ample air pressure in the tank. This pressure can be instantly released, when desired to extinguish the flame, by means of an air valve and screw in the filler plug on the top of the tank. A cleaning needle supplied with the fire pot can be used to clean any part that may become clogged from impurities in the kerosene.

"C. & L." No. 222 Fire Pot.

THE "HOTSTREAM" WATER HEATER.

The accompanying illustrations will give the reader quite a clear idea about the construction of the "Hotstream" water heater, manufactured by the Hotstream Heater Co., of 1385 East Seventeenth Street, Cleveland, Ohio. A glance at the one piece spiral casting shows that it offers no flat surfaces to form sediment pockets, and its construction is such that it cannot choke the flame so as to cause soot formation. The heat revolves about the coil, which with its large amount of heating surface utilizes every unit of heat. This coil has no joints to leak and it is treated with a special anti-rust solution preventing atmospheric corrosion before installation. The heater jackets are double and lined with asbestos, providing a dead air wall between, which holds all the heat inside of the heater around the coil, the jacket fitting snugly about the coil. This heater is equipped with a large door for easy lighting its non-clogging one-piece burner. The jacket is finished with an indestructible enamel, fired on the inside and outside surfaces under 2,200 degrees of heat. This jacket can be raised without releasing any nuts or bolts or disturbing the vent pipes. These heaters can be furnished with a pilot light at a slight additional cost, and they are made for both gas and gasoline. Parties interested in water heaters of this type can obtain full particulars from the above-named company upon application.

Steel and Iron.

The demand for steel bars by manufacturers of shrapnel continues in large proportions with the mills booked far ahead. Manufacturers who have received contracts for shells are losing no time in placing orders for their steel requirements. The Carnegie Steel Company announced last week an advance of $1.00 a ton in plates, shapes and bars, making the price $1.35. It is expected that this price will become general in about three weeks. During the week galvanized steel products, which were advanced sharply on the abnormal rise in spelter, were reduced in price to $3.75 to $4.00 instead of $5.00 to $5.50. The Russian Government placed an order for 65,000 tons of steel rails last week, making the total rail purchases of that government amount to 200,000 tons.

Large bookings of pig iron for the first quarter of 1916 have been made by the Buffalo furnaces. It developed last week that orders aggregating 40,000 tons had been taken by certain producers without solicitation at $14 furnace for No. 2X. The amount of business done during the past week in the local territory for the last quarter was small. Some furnaces are not inclined to book additional business for the last quarter, but a number of consumers are in the market for filling in lots as contract purchases are not sufficient to cover consumption which is greater than had been looked for. In the Pittsburgh district there has been an increased demand for Bessemer and basic. The recent Russian rail business placed calls for Bessemer iron and this has added more strength to the market. Foundry and malleable grades have been advanced to $14.50 valley, while gray forge is held at $14 valley. At Birmingham the leading interest still continues to book freely for next year at $12.50 but all other producers are holding in the reins on future business. Quotations are as follows:

No. 2X Northern Foundry, New York	$15.75 to $16.25
No. 2X Northern Foundry, Buffalo	14.00 to 14.50
No. 2 Southern Foundry, Birmingham	11.00 to 11.50
No. 2 Southern Foundry, Cincinnati	13.90 to 14.40
No. 2 Southern Ohio Coke, Cincinnati	14.00 to 14.50
No. 2 Northern Foundry, Chicago	14.00 to 14.50

Lead.

Dullness in the lead market prevailed during all of last week. Outside interests are not inclined to offer the metal at any great cut under the price of the leading interest, it being the general opinion that the recent contracts made by Russia and France for munitions would bring inquiry into the market. Spot lead closed at 4.45c New York, and 4.35c East St. Louis.

Copper.

The copper market is undergoing, no doubt, the longest period of inaction, in so far as buying is concerned, in the history of the industry. For the past two months consumers have neglected the market to such a degree that the price has receded from over 21c to the present level of 16c. Consumption of copper is on a large scale but the present condition in the metal has been brought about mainly through the price inflation that took place when foreign governments and domestic consumers making war materials competed with each other in securing stocks of copper. Producers believing that the war demand would continue indefinitely forced copper prices above 20c and then followed this action by a remarkable increase in production. The output in June was large—the output in July was larger still and estimates on the output during August indicate a record breaking production. Consumers fearing further advances bought heavily for their needs during the remainder of the year and then suddenly the demand ceased.

Spelter.

The market in spelter closed with some show of strength after opening the week with a tendency toward lower prices. What business was done was in future positions, the impression being that the short interests were seeking to cover. The market closed with spot being quoted at 11c New York, and 10.75c East St. Louis.

Tin.

After a showing of firmness during the preceding week the tin market was unsettled and weak. Consumers no longer display much interest in future positions. Users of tin feel that the market will not show unusual activity. This belief is caused by the fact that England's requirements are greatly reduced by reason of the embargo on the exportation of tin plate and that producers at the Straits prefer to do business direct with this country than through London, which market is depressed. Spot tin opened at 34¾c with the market steady but at the close the price had declined to 33½c. Arrivals of tin during August so far amount to 3,420 tons with about 4,850 tons afloat to this country.

Old Metals.

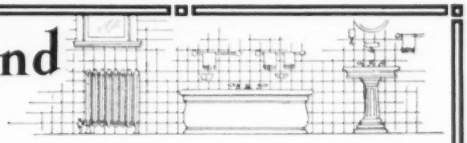
New York dealers' buying prices are all nominal, as follows:

Strictly crucible copper	$13.50 to $13.75
Light copper	12.00 to 12.25
Heavy brass	9.00 to 9.25
Cocks and faucets	9.25 to 9.50
Light brass	7.00 to 7.25
Solder joints	7.00 to 7.25
Heavy lead	3.50 to 3.60
Tea lead, nominal	3.25 to 3.40
Scrap zinc	6.40 to 6.50

SPELTER PRODUCTION FOR FIRST SIX MONTHS OF 1915.

The production of spelter for the first six months of the year has been canvassed by C. E. Siebenthal, of the United States Geological Survey, with the following results expressed in short tons: The output of spelter was 207,634 tons made from domestic ores and 8,898 tons from foreign ores, a total of 216,532 tons, as compared with 177,991 tons for the preceding six months and with 175,058 tons for the first six months of 1914. In addition there was produced by distillation from drosses and skimmings 13,546 tons of secondary spelter, as compared with 10,273 tons, the half of the 1914 output of distilled secondary spelter. No statistics were obtained of the spelter produced by remelting skimmings, drosses, etc., but it was probably not less than 12,000 tons. The total output of spelter from both ore and skimmings was therefore about 242,000 tons, or at the rate of 484,000 tons per year. The whole number of retorts in operation in June was about 127,000, but many of these retorts had been but recently put in operation. Additional retorts to the number of over 32,000 have since been completed, are under construction, or are planned. The apparent domestic consumption for the six-month period was 160,906 tons, as against 149,762 tons in the preceding six months and 149,306 tons in the first six months of 1914. The spelter stocks on hand at smelters were 5,884 tons, an average of about 150 tons each for the plants reporting.

Among the Plumbing and Heating Contractors



Illinois

Chicago and Vicinity.

Master plumbers, property owners and others have made numerous complaints to the police regarding the theft of lead pipe in residences throughout the city. It is claimed that more than 300 residences have been robbed of pipe, involving a loss of nearly $500,000. Acting Chief of Police Herman Schuettler has enlisted a flying squadron with specific orders to put a stop to the wholesale stripping of vacant houses, and buildings in course of construction. The police have orders to arrest on sight every person who has lead pipe in a sack, pocket or wagon, and who cannot give a convincing explanation.

The heating contract for a twenty-four flat apartment building, to be erected at 6900-6908 Michigan Avenue, has recently been awarded to H. T. Donohue, of 3808 West North Avenue.

Morris Cohn, of 1946 West Division Street, has been awarded the contract for the installation of plumbing in a six-family apartment house, to be erected at 1827 Evergreen Street.

John Lindvall, of 7520 Cottage Grove Avenue, will install the plumbing system in a twelve-flat dwelling, to be built at 7801-7803 Carpenter Street.

E. P. Inscho, Mrs. T. W. Hall, Miss L. H. Hall and T. W. Hall, all of Birmingham, Ala.—From "Domestic Engineering" Photo, Taken at the recent Chicago Convention of the National Association of Master Plumbers.

E. J. Claffey, of 12 Illinois Street, will install the steam heating system in a thirteen-family apartment house, to be built at State and Division Streets. He also will install the heating system in a nine-store and two-family house, to be erected at 4750 North Western Avenue.

Do You Know Where He Is?

Many complaints have recently reached "Domestic Engineering" from subscribers in Illinois and Indiana stating that they have paid subscriptions to A. Metzger, but have not been properly credited. As we have not been able to get in touch with Mr. Metzger we are compelled to ask our subscribers to stop paying subscriptions to him, and will appreciate any information as to his whereabouts.

Michigan

Detroit.

The Johnson-Larsen Co. has been awarded a number of good heating contracts in connection with the assembling plants to be erected by the Ford Motor Co., in other cities, among which are the heating installations in the new service station to be erected in Washington, D. C., and in the service station to be erected in Milwaukee, Wis. The plumbing in the latter building will be installed by the Drake-Avery Co., of Milwaukee.

C. H. Deane & Co., have secured the plumbing contract for the new building being erected for the Hudson Motor Car Co. The same firm has been awarded the contract to install the plumbing in the new (400 by 80 foot) factory building being erected for the Detroit Wire Spring Co. The heating in this building will be installed by the Johnson-Larsen Co.

Massachusetts

Boston and Vicinity.

Patrick J. Osborne, who has been serving as plumbing inspector of the school house department of the city of Boston under a temporary appointment for about three months, has been given a permanent appointment under civil service.

John J. M Hatton, a heating contractor of Chelsea, has announced his candidacy for membership in the board of aldermen in that city. Mr. McHatton has been a resident of the city for many years and has always taken an active interest in city affairs.

Public comfort stations are soon to be erected in Lynn and Malden. In the former city an appropriation of $7,000 has recently been made for a building on the Common, while in Malden plans are being considered for such a station to be erected at the play ground known as Ferryway Green. An appropriation of about $2,500 is available.

William L. Healy, of Chelsea, Mass., a member of the Waverly Heating & Supply Co., of Boston, was married on August 16th to Miss Annette L. Kane, of West Roxbury, the ceremony taking place in West Roxbury.

Frank J. Low, a Chelsea plumbing contractor, was married on August 12 to Miss Anna Adelson, also a resident of Chelsea.

Other Cities in the State.

The school committee of Westfield has awarded a contract for a new heating system in the Davis School, in that town, to Hildreth & Mashin, this firm being the lowest bidders.

Hall & Torrey, of Rockland, have been awarded the contract for plumbing in the proposed addition to the School Street School, in that town.

Charles A. Middlemas, of Worcester, has been awarded the contract for plumbing in 25 houses being built in the

Indian Hill Section. The contract amounts to about $10,000.

Plumbing work at the plant of the Greylock Manufacturing Co., at North Adams, requiring fourteen fixtures, is to be done by Veazie & Morrissey, of that city.

The school committee of Leominster has asked for bids for the installation of a new sanitary system in the Lincoln School, in that town, for which an appropriation has been made by the town.

Contracts for a $40,000 building to be erected for the state at the Insane Colony, at Grafton, have recently been let. The plumbing went to J. T. Cahill & Sons, of Worcester, for $3,480, and the heating to M. D. Holmes & Sons Co., also of Worcester, for $2,763. There were a number of bidders for both contracts.

J. Wallace Grace, of Wakefield, has been awarded the heating contract for a new business building being erected on the Richardson Estate on Main Street, in that city.

Contracts for new sanitary arrangements at the Cobbet and Jackson Schools, in Lynn, have been awarded, the former to Reardon Bros., and the latter to John F. Morgan & Sons, Inc.

The North Shore Master Plumbers' Association of Salem and Vicinity, having in mind the very valuable services of its secretary, James H. Trow, who is also secretary of the state association, "put one over" on Jim, August 17th. The association delegated the executive committee to proceed to Camp Kenzocity where Mr. Trow is wont to spend what few idle moments he has, and present him with an up-to-date "garage" to put his "Fliva" in. The committee graded up the road leading to his camp, and then erected the "garage." To say that Jim was surprised is putting it mildly. The friendly workers were reported to have been a warm and perspiring "bunch." Williamson, with the plans (which he left at home), Pierce with a new pair of overalls and a pick and plenty of pluck, and Rube Deckham, with "Domestic Engineering" in his pocket, were certainly a handsome crowd.

California

San Francisco.

The Scott Co. has secured the contract for the heating system to be installed in the eight-story Class A building now being constructed by the Pacific Gas & Electric Co., on Sutter Street, near Powell.

Plans have been completed for a five-story and basement apartment house to be erected on Hyde Street, near Sutter, by J. Dempniak. The building will contain 30 two and three-room suites, each with private bath and the building will cost approximately $40,000.

Los Angeles.

Home building continues to be the only real feature in construction activity in Los Angeles, the number of income improvements outside of flats being small in comparison with those of other years. New residences of every size and description, however, are springing up all over the city, and nearly all are being built by owners for their own occupancy.

Robert Ward, of 3168 West 10th Street, is installing the plumbing in Mr. Walker's $50,000 residence being erected in Laurel Canyon.

Plans have been completed for the new French Hospital at College and Castelar Streets, Los Angeles. The building will include on the first floor a reception room, offices, examination room, rest room, sun porches, diet kitchen, a four-bed ward and eleven private rooms; on the second floor, a four-bed ward, nine private rooms, diet kitchen, rest room, maternity room, nursery and an operating wing.

J. B. Lawler, of 2989 West Pico Street, has the contract for the plumbing in C. H. Thompson's palatial residence being erected in Fremont Place, which calls for the installation of twenty-five high grade fixtures.

Crowell & Sutton, of 744 San Pedro Street, have been awarded the contract at $4,689 for the plumbing work in the Jefferson Street school, and have also secured the contract for the Seventh Avenue school addition.

J. Hokom, 4312 Moneta Avenue, has secured the plumbing contract for the Hobart Boulevard school at $2,039.

The Hoagland-Larkin Electric & Engineering Co. has been awarded the contract for the heating in the Rowan Avenue school at $5,337.

A number of delegates to the National Convention of the American Society of Sanitary Engineering stopped over in Los Angeles for several days on their return East to take in the sights of the Southland. John S. Kelly and Thomas J. Claffy of Chicago were in the party.

Sealed bids are being received for supplying the Los Angeles Board of Public Service Commissioners with 14,000 brass curb cocks. Bids are also being received for furnishing quantities of couplings, nipples and tees to be delivered at the yards of the water works.

Work is now under way on a new four-flat building being erected by J. A. Rogers, on South Hobart Boulevard, Los Angeles. Each flat will include six rooms and two baths.

Other Cities in the State.

The contracts covering the factory of the Shredded Wheat Biscuit Co., being constructed in Oakland, were awarded a few days ago. The plumbing contract was awarded to Robert Dalziel, 218 First Street, San Francisco, and the heating to the Atlas Co., of San Francisco.

At a recent meeting of the board of trustees of Gilroy, plans were made for the renewing of the filter beds of the local sewer system and for the extension of the outlet pipe along the Old Gilroy Road, a distance of 1,600 feet.

A. L. Taylor and E. C. Winnie have formed a partnership and will open a plumbing establishment at Alturas, in the near future.

C. G. Carlson and A. B. Goff, of Santa Ana, recently bought out the Bell Plumbing Co., and have formed a partnership to conduct a plumbing business. The new concern will operate under the name of the Carlson & Goff Plumbing Co.

The Union High School Board, of Venice, is receiving bids for the plumbing in the unfinished rooms of the high school as well as for other work.

Plans have been completed for the new group of County Hospital buildings to be erected at San Bernardino. The entire group will cost between $130,000 and $150,000. It will include a four-story building with administration offices, reception rooms, consultation rooms, a dispensary, nurses' quarters, etc.; two two-story wings containing operating rooms, wards and private rooms for patients; a tuberculosis ward building, a building for indigents and a building for the criminal quarters. The entire group will be provided with the latest improvements in hospital plumbing, steam heat and modern devices.

Elmer Smith of Long Beach, has secured the contract for the plumbing in Frank Clark's residence at 1871 Walnut Street, the specifications calling for high class fixtures.

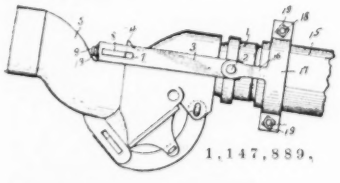
Patents

Plumbing Department.

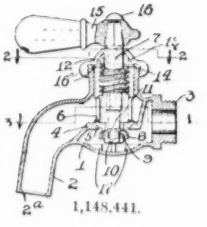
1,147,889. Pipe-Coupling. William F. Potts, Kansas, City, Mo. A pipe coupling comprising two tubular members, one having an abutment, a connecting member pivoted to the other tubular member, a wedge adapted for insertion between the connecting member and said abutment, and releasable means for locking the wedge in the operative position.

1,147,935. Sanitary Flushing-Tank. John Lincoln Gish, South Bend, Ind. The combination with a tight flushing tank, an air supply pipe leading into said tank below the water level therein, and a water supply pipe arranged, in the air supply pipe, below the water level in the tank, said water supply pipe having an inwardly opening valve arranged in its water passage, said air supply pipe having an inwardly opening valve arranged in its air passage, the outer end of said air passage serving as a drainage outlet, said drainage outlet provided with an auxiliary air inlet, said air inlet provided with a valve, arranged and housed, to prevent the egress of water, through the said air inlet.

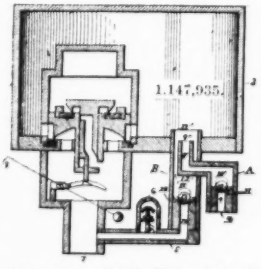
1,148,441. Rapid-Compression Cock. Albert C. Brown, Chicago, Ill. In a device of the character described, a chambered body having a nozzle at one side thereof and an inlet opening on the other side, a partition disposed intermediate said openings and having a seat aperture therein, a sleeve extending through said body but projecting at its upper end above said body, said sleeve resting at its lower end on said seat in said partition, a valve stem in threaded engagement with said sleeve and extending through the same, a closure on the lower end of said stem adapted to engage the lower end of the sleeve, and a cap in screw threaded engagement with the top of said body and adapted to force said sleeve to its seat in said partition.



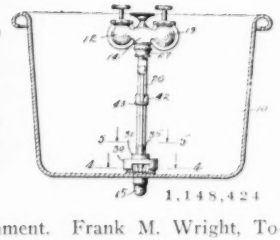
1,147,889.



1,148,441.



1,147,935.



1,148,424.

1,148,424. Bath-Tub Attachment. Frank M. Wright, Topeka, Kans. A tub attachment comprising a housing having a chamber provided with a reduced outlet, a plate provided with an upstanding wall fitting within said housing, an outlet spout leading from said plate and forming a valve seat, a bushing carried by said housing above said valve seat, a stopper fitting into said valve seat, a plunger slidably mounted in said bushing and carrying said stopper, a conduit pipe communicating with the chamber of said housing, and means for slidably connecting said plunger with said conduit pipe.

RELIABLE

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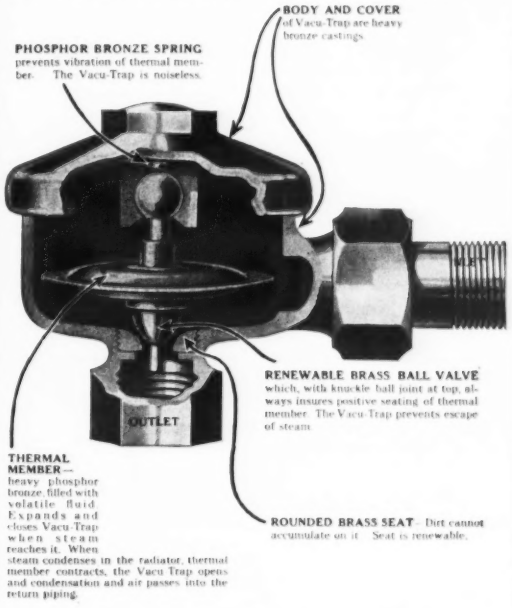
BODY AND COVER of Vacu-Trap are heavy bronze castings.
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OUTLET
RENEWABLE BRASS BALL VALVE which, with knuckle ball joint at top, always insures positive seating of thermal member. The Vacu-Trap prevents escape of steam.
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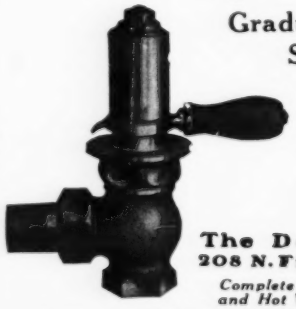

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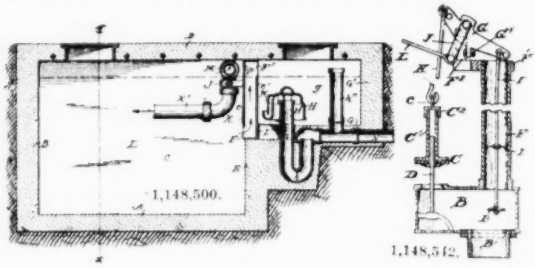
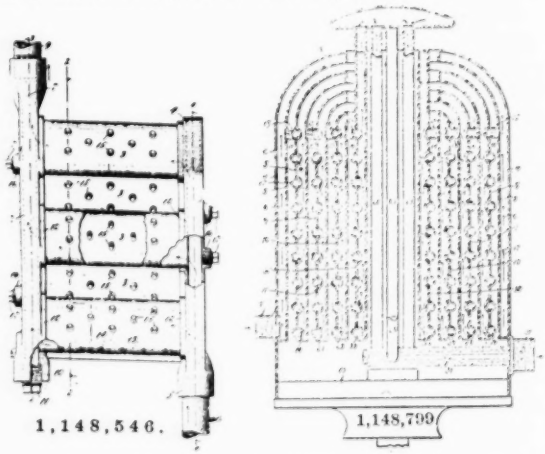
Kitson Company, Philadelphia, Pa.

1,148,500. Septic Tank. Xenophon Caverno, Kewanee, Ill. A septic tank, including the combination with tank walls provided with an outlet, of an inlet duct extending through a side wall of the tank at a point above the level of the outlet and provided with a downturned elbowed member, said duct having its upper wall apertured within the tank and above the level of the outlet to provide a vent for air and gas; said duct being also provided with an elbowed delivery portion below the outlet adapted for a horizontal discharge of liquid below the normal level of the liquid in the tank, whereby air and gas may be discharged into the tank above the level of the liquid therein, and liquid may be delivered below such level with minimum disturbance to the contents of the tank.



1,148,500. 1,148,542.

1,148,542. Flush-Valve. Frederick A. Schossow, Detroit, Mich. In a device of the character described, a casing having an inlet port in its upper side at one end thereof and an outlet port in its bottom at the opposite end thereof, the side walls of said casing being imperforate, a valve controlling the passage through the inlet port, means to raise the valve, means suspended from the aforesaid means in alinement with the outlet port and movable toward the outlet port into the path of the water passing through the casing from the inlet to the outlet port when said valve is raised by the valve raising means, and which is acted upon by the water to maintain the valve in its raised position while the water is being discharged through the casing and whereby said valve returns gradually automatically to its normal position.



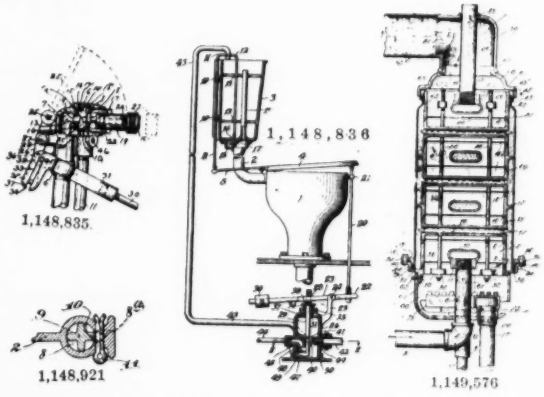
1,148,546. 1,148,799

1,148,546. Water-Heater. William M. Shaw, Greenville, Me. A water heater of the class described, comprising spaced vertical headers, each being formed in an integral piece, one header having an inlet at its lower end, and the other header having an outlet at its upper end, water tubes connecting said headers, each tube being flat in cross section and inclined upward from the inlet header to the outlet header, said tubes being also inclined transversely and alternately in opposite directions, the up-

per edge of each tube being arranged adjacent and above the lower edge of the tube next above it, the headers having openings into the tubes, and a burner directed toward the lowermost tube.

1,148,799. Gas Water-Heater. Anders J. Rasanen, Springfield, Mass. A water heater comprising a plurality of concentric sections the upper ends of which are bowed inward, a series of pipes surrounding the several sections, said pipes connected at the lower ends of the sections which they surround and their upper ends with the adjacent outer sections the inner sections connected with vertical pipes, a mixing drum into which the upper ends of the vertical pipes discharge, vertically arranged pipes opening from said drum, an inlet into the outer section, and an outlet from the discharge pipes from said drum.

1,148,835. Ball-Cock. Tilghman J. Florey, Washington, N. J., assignor to American Sanitary Works, New York, N. Y., a Corporation of New Jersey. The combination with a hollow body having inlet and outlet chambers connected by a port, and a reciprocable plunger having at one end a valve-head for opening and closing said port, the opposite end of said plunger extending beyond the body and having a slot, of a valve operating mechanism comprising a loop, one end of said loop engaging the slot in said plunger, a nut screwed on the plunger for holding the loop in said slot, a rocking lever, one end of said lever connected to the opposite end of said loop, a yoke straddling said body adapted to support a float, and a second link connecting said yoke with the opposite end of said lever.



1,148,836. Self-Closing Valve for Water-Closets. William U. Griffiths, Philadelphia, Pa. In a device of the character described, the combination of a casing having an inlet port through which water enters the said casing, an outlet port through which water issues from said casing on its way to any desired point, and also a waste water port through which waste water issues from said casing, a valve for opening and closing the inlet port, a valve for opening and closing the waste water port, a support for said waste water valve, said support having means for controlling said inlet valve, a pivoted lever having connection with the said valve support, and automatically operating means having connection with the said support for causing movement thereof to cause the opening and closing of said valves.

1,148,921. Laundry-Tub Stand. John O'Brien and Leo A. Hewitt, Minneapolis, Minn. A stand, having a supporting surface provided with a grooved socket, a pipe-supporting post seated in said socket, and having a plurality of radial flanges projecting from the longitudinal axis of said post, said flanges being telescoped into said socket, one of said flanges being notched and extended

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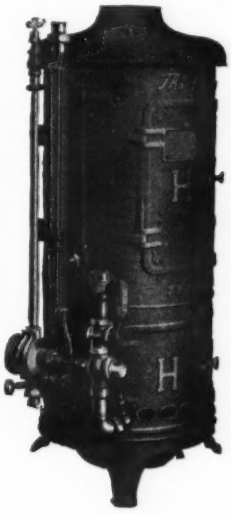

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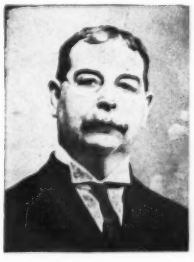

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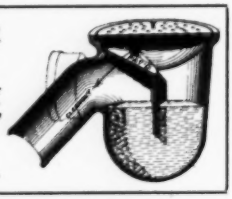

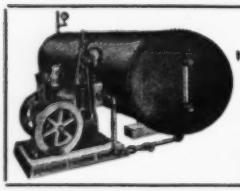

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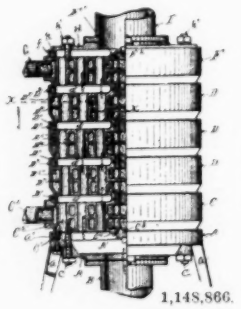
into the groove of said socket, and a pin, seated in said stand, engageable with the notched flange of said post, to secure the same in different vertical adjustments.

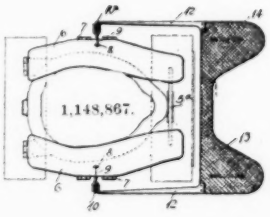
1,149,576. Water-Heater. Arthur L. Gassett, Cleveland, Ohio. In a water heater, the combination of a shell, a drum comprising a series of superimposed sections fitted together to form a wall that is spaced from the shell, sealing means between the ends of the drum and shell, the space thus inclosed having at one end an inlet, and at the opposite end an outlet opening whereby water may be circulated through such space, and a heating device located in operative relation to the drum and shell.

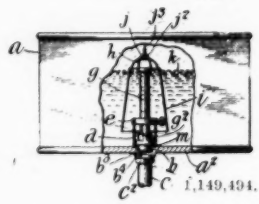
1,148,866. Water-Heater. George A. Sims, Erie, Pa. In a water-heater the combination of a series of integral sections having heating fluid passages therethrough and therebetween and water passages therein, superimposed upon each other, with the water passages therein centrally connected, and flanges on said sections inclosing the spaces between the same, substantially as set forth.

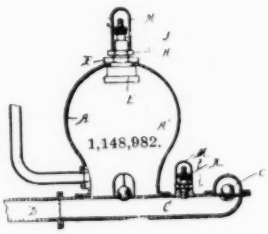
1,148,867. Toilet-Seat Cover. John Sivak, Alexander Nagy and Ladislaus Banduray, New York, N. Y. The combination with paper covered toilet seats comprising two separate seat sections, of laterally opening covers secured to said seat sections, adapted to protect the paper covering on said seat sections while leaving uncovered the space comprised between the inner edges of said seat sections, substantially as and for the purpose set forth.



1,148,866.



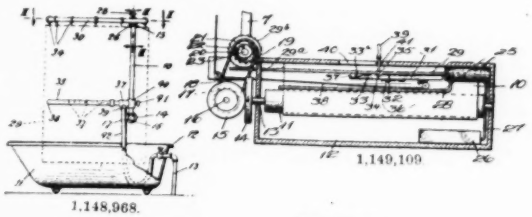


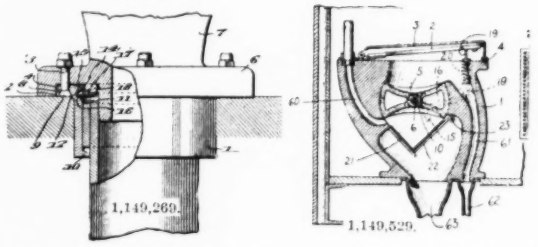


1,149,494. Flush-Tank. William Briggs, Brooklyn, N. Y.; Magdalena M. Briggs, executrix of said William Briggs, deceased. In a discharge mechanism for flush tanks, a tube adapted to be secured in the bottom of the tank and provided in its inner end with a valve seat and an integral valve cage, a cap detachably connected with the top of said cage and a valve tube passing centrally through said cap and movable therethrough and provided at its lower end with a valve which operates in connection with said valve seat.

1,148,982. Hydraulic Ram. William Nicholas Hook, New Zealand. In a hydraulic ram, the combination of a waste pipe having an outlet valve; an air dome communicating therewith at a distance from said valve, and having an opening at the upper part thereof; an inwardly and outwardly threaded hollow bush in said opening and having a shoulder engaging the inner face of the dome; a nut screwed to the outer threads of the bush and engaging the outer face of the dome and clamping the plug in

said opening; a hollow screw plug screwed in the hollow bush; and an inwardly opening normally closed valve in said plug and having a threaded end for the reception of a pump connection.



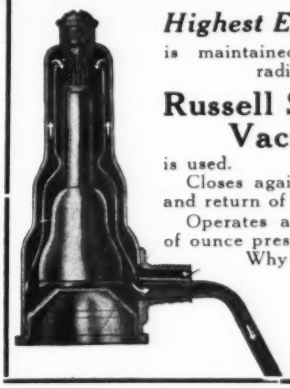


1,148,968. Shower-Bath Fixture. Vincent F. Jablonski, New York, N. Y. In a shower bath fixture, a post adapted to be fastened to a support in a vertical position adjacent to one end of a bath tub, or other water receiver, a pipe-like spray element having one end movably connected to the support so as to be adjusted upwardly and downwardly thereon as well as being swung circumferentially over the tub whereby water may be showered on the desired parts of the body of a bather, and the said spray element having an inlet for the admission of water, means connected to the inlet, leading from a source of water supply for delivering water to the spray element, two oppositely disposed apertured bosses on the upper end of the post, and a split substantially elliptic ring having its ends inserted in the apertures of the bosses, as set forth and for the purpose specified.

1,149,109. Sanitary Toilet Attachment. Merrill H. Baldwin, San Diego, Cal. In a device of the character described the combination with a seat and lid, of a pair of rolls, adapted to have a paper web wound thereupon, and to be drawn from one of said rolls to the other across said seat, and connections between one of said rolls and said lid whereby movement of the lid imparts rotation to said roll to wind the paper web thereon, and means also actuated by said lid for spraying the used portion of the paper with an antiseptic solution.

1,149,269. Closet-Flange. George J. Klindt, Burlington, Iowa. A closet flange hub combination including a flange proper, bolt receiving openings formed in said flange proper, and a reversible seat ring adapted to be removable and interlocking with the flange proper by lugs, said ring having a flat under surface and a concave upper surface, said ring being reversible to present a concave or a flat packing engaging surface.

1,149,529. Closet. Alexander McGary, New York, N. Y., assignor by mesne assignments, to Gould Coupler Company, a Corporation of New York. In a device of the class described, an electrical heater for receiving and heating excreta, said heater having a plurality of electrical heating elements, means for connecting said elements in series upon one occupying the device, means for connecting said elements in parallel upon one leaving the device, and means for automatically disconnecting said elements electrically after one has left the device.



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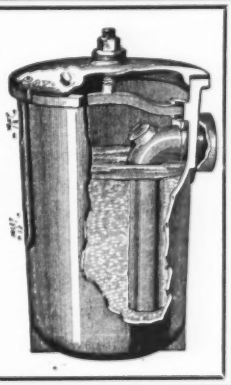

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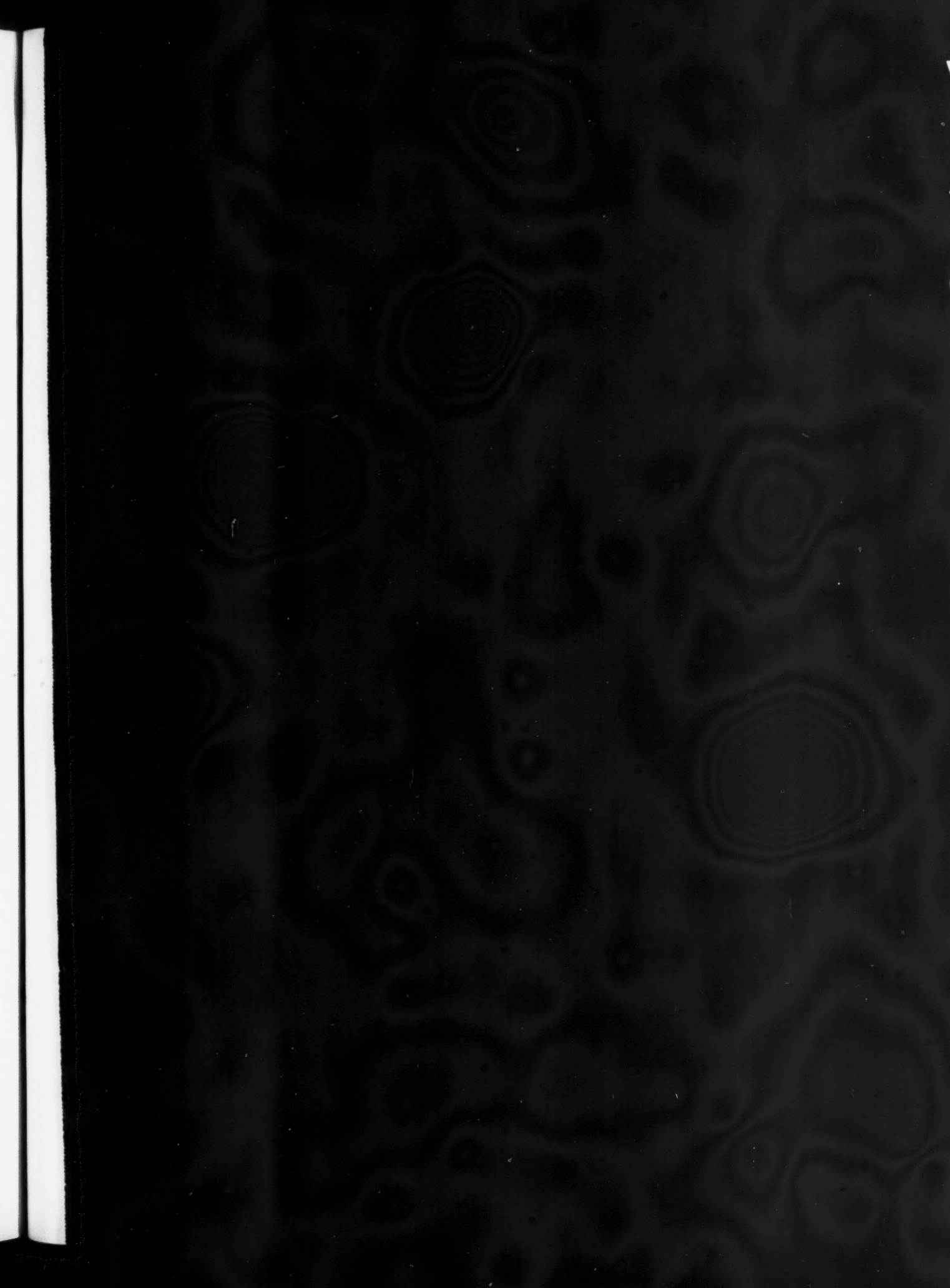
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